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DEPARTMENT OF INTERNAL AFFAIRS

GROUND - WATER RESOURCES
OF THE
VALLEY - FILL DEPOSITS
OF
ALLEGHENY COUNTY, PENNSYLVANIA

BY
J. H. ADAMSON, JR., J. B. GRAHAM, AND N. H. KLEIN



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OF

ALLEGHENY COUNTY, PENNSYLVANIA

By J. H. Adamson, Jr., J. B. Graham,
and N. H. Klein
U. S. Geological Survey

Supplement to Bulletin W 1
GROUND WATER IN SOUTHWESTERN PENNSYLVANIA

Prepared in cooperation with the
United States Geological Survey

DEPARTMENT OF INTERNAL AFFAIRS
William S. Livengood, Jr., Secretary

Topographic and Geologic Survey
S. H. Cathcart, Director

Harrisburg, Pa.

1949



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GROUND-WATER RESOURCES OF VALLEY-FILL DEPOSITS OF
ALLEGHENY COUNTY, PENNSYLVANIA

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GROUND-WATER RESOURCES OF VALLEY-FILL DEPOSITS OF ALLEGHENY COUNTY

By J. H. Adamson, Jr., J. B. Graham, and N. H. Klein

ABSTRACT

This report describes the ground-water resources of the valley-fill deposits of Allegheny County, in western Pennsylvania. In an earlier report, Pennsylvania Topographic and Geologic Survey Bulletin W-1, "GROUND WATER IN SOUTHWESTERN PENNSYLVANIA," by A. M. Piper, published in 1933, the geology and ground-water resources of the bedrocks of Allegheny County were described. The present report supplements the earlier work of Piper, by describing the occurrence and utilization of ground water in the valley-fill deposits, which provide the chief source of municipal and industrial ground-water supplies in the county.

With Pittsburgh at its center, Allegheny County encompasses one of the most highly industrialized areas in the United States. Large quantities of water are required to supply a part of the 1,550,000 inhabitants and the many industries of the county. The chief uses of ground water are for air conditioning and industrial cooling.

By far the most important source of ground water in Allegheny County is alluvium that partly fills the valleys of the Allegheny and Ohio Rivers. The alluvium of these rivers consists of gravel, sand, and clay of fluvioglacial origin, chiefly late Wisconsin in age. The Monongahela Valley, although aggraded contemporaneously with the Ohio and Allegheny Rivers, drains an area to the south, well removed from sources of glacial debris. The alluvial deposits of that valley are more poorly sorted, finer in texture, and less well suited generally, for large ground-water yield.

The surface rocks of Allegheny County beyond the main river valleys are predominately shales and sandstones with minor thicknesses of limestone and coal, and range in geologic age from lower Pennsylvanian to middle Permian. The indurated rocks of Allegheny County yield sufficient ground water for farm and small domestic requirements but supply only a small proportion of the ground water currently used by industry and centers of population.

Daily summertime ground-water withdrawal from river-valley alluvium averages about 84 million gallons. Of this quantity about 16 million is pumped for municipal needs and about 68 million for industrial and air conditioning uses. Alluvial sediments of glacial origin in the Allegheny and Ohio Valleys supply 80 of the 84 million gallons required daily during the summer. The valley alluvium averages about 60 feet in thickness and has not been found to exceed 85 feet. The width of the productive water-bearing sands and gravels corresponds closely with the width

of the present valleys and averages somewhat less than 1 mile. Yields from drilled vertical wells range from less than 100 gpm to more than 1,000 gpm. One large dug well, 24 feet in diameter, has a capacity estimated in excess of 9,000 gpm.

It is believed that a substantial part of the water derived from wells in the valley alluvium is supplied by recharge from the rivers. Stream flow in the major rivers is controlled by a series of locks and dams, thus maintaining an artificial level or pool stage at all times, except during floods. As a consequence, recharge conditions remain relatively constant throughout the year. Fluctuations in water level are due primarily to changes in rates of withdrawal. During the summer, water-level fluctuations in downtown Pittsburgh show a close relation to air-temperature changes, as air-conditioning use constitutes a large percentage of total pumpage in that area.

The Triangle area of downtown Pittsburgh and the upstream end of Neville Island in the Ohio Valley show the greatest concentration of ground-water pumping and are the chief areas where critically low pumping levels are known to exist. Along other sectors of the Ohio-Allegheny valley where the valley and the underlying aquifer are sufficiently wide, favorable sites are generally available for new or additional ground-water development. The nature of the sand and gravel deposits of the Monongahela Valley indicate that for the most part that valley is considerably less favorable for the development of large supplies of ground water for industries and municipalities.

Water from the valley alluvium is generally harder than water in the adjacent rivers and contains more iron and manganese. Concentrations of dissolved mineral matter in the well water vary greatly from place to place, but the quality of ground water is acceptable for most purposes except in certain places where the water has been contaminated by industrial wastes.

The report includes tabulation of well data and ground-water use, well logs, and chemical analyses, and maps showing the locations of about 300 wells. Thickness of valley fill and depth to bedrock are shown by geologic cross sections and contour maps.

INTRODUCTION

Purpose and Scope of Report

A systematic investigation of the ground-water resources of the Commonwealth of Pennsylvania was begun in 1925 by the Pennsylvania Topographic and Geologic Survey in cooperation with the United States Geological Survey, Department of the Interior. Until 1943 this program was conducted on a limited scale by geologists of the Federal Survey assigned to Pennsylvania for summer field work. The first ground-water field office in Pennsylvania was established in Philadelphia in 1943, and detailed studies of ground-water conditions in the Philadelphia area were started. In 1945 a branch office was opened in Pittsburgh and a systematic investigation of the ground-water resources of Allegheny County was begun.

The purpose of this report is to supplement the information on the ground-water resources of Allegheny County published in Bulletin W-1, entitled "GROUND WATER IN SOUTHWESTERN PENNSYLVANIA," by A. M. Piper, which was issued by the Pennsylvania Topographic and Geologic Survey in 1933. The present report presents a fairly complete inventory of municipal and industrial wells, and describes the utilization of ground water from the highly productive unconsolidated sediments partially filling the valleys of the major rivers in the county. In addition, data on fluctuations of ground-water levels, well logs, chemical analyses of well water, and profiles and maps relating to the valley-fill sediments are presented. It is believed that this factual type of report will serve as a basis for more

detailed studies which may be made necessary in the future, as the withdrawal of ground water keeps pace with industrial and municipal growth.

To date, the Commonwealth of Pennsylvania has not found it necessary to exercise control over the use of its ground-water resources. Furthermore, well drillers and owners of wells have not been required to register or file information pertaining to the installation and use of water wells in Pennsylvania. Consequently, little is known of the present use and availability of this vital resource. It is the plan of the cooperating agencies to publish inventory-type reports on each county in the Commonwealth, as such information is a prerequisite to the planning of the fullest development and protection of the ground-water resources of Pennsylvania.

Location and Extent of Area

The area covered by this report comprises all of Allegheny County, including the city of Pittsburgh. Allegheny is the principal county of the six-county area described by Piper in Bulletin W-1, and has a land area of 733 square miles and a river area of 14 square miles. The city of Pittsburgh, at the junction of the Ohio, Allegheny, and Monongahela Rivers, is the county seat and lies almost in the geographical center of the county. The county is the hub of the Tri-State trading area (western Pennsylvania, West Virginia, and eastern Ohio), which has a population of approximately 6,000,000.

Wells having a sufficient yield to serve municipal and industrial needs are primarily confined to the major stream valleys within the county, and consequently their descriptions comprise the main body of the report. Although there are a large number of residential and farm wells in the out-

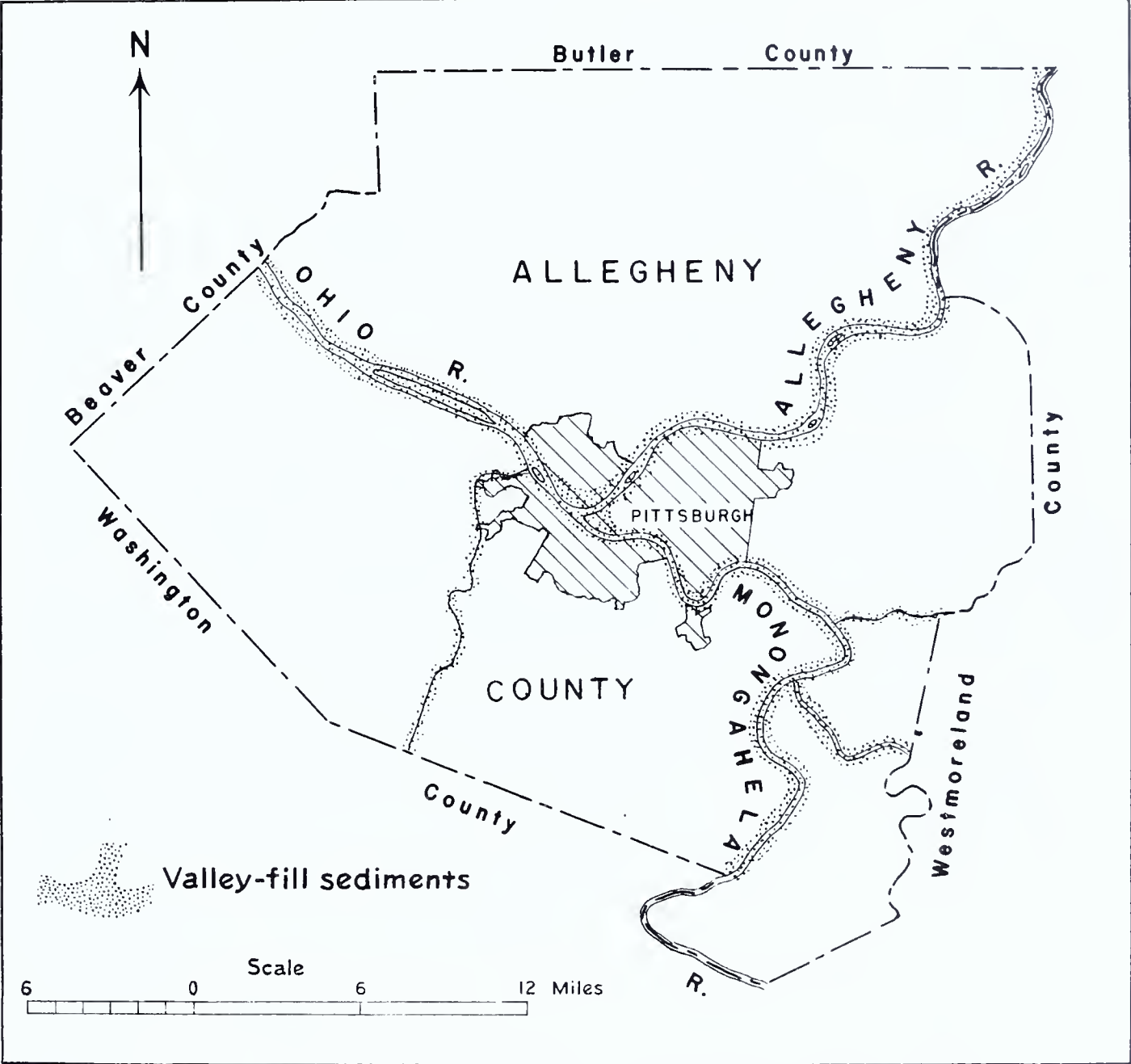


FIGURE 1. Map of Allegheny County, showing the distribution of the valley-fill sediments described in this report.

lying districts of Allegheny County, they yield a very small proportion of the total amount of ground water withdrawn in the county, and the present investigation has not been extended to the tabulation and description of these numerous small wells. Descriptions of typical wells are given in Bulletin W-1.

Figure 1 is a map of Allegheny County showing the distribution of the valley-fill sediments described in this report.

Previous Studies

A series of ground-water reports, Bulletins W-1 to W-7 of the Pennsylvania Geological Survey, Fourth Series, were published between 1933 and 1941. These reports, the first six of which describe the ground-water resources of the Commonwealth by regions, are as follows:

- Bull. W-1, Ground water in southwestern Pennsylvania, by A. M. Piper, 1933.
- W-2, Ground water in southeastern Pennsylvania, by G. M. Hall, 1934.
- W-3, Ground water in northwestern Pennsylvania, by R. M. Leggette, 1936.
- W-4, Ground water in northeastern Pennsylvania, by S. W. Lohman, 1937.
- W-5, Ground water in south-central Pennsylvania, by S. W. Lohman, 1938.
- W-6, Ground water in north-central Pennsylvania, by S. W. Lohman, 1939.
- W-7, Ground-water resources of Pennsylvania, by S. W. Lohman, 1941.

Although the W-series reports describe in general the geology and ground-water resources of each county, no attempt was made to present comprehensive data relating to the occurrence and utilization of municipal and industrial ground-water supplies. Bulletin W-1, relating to the area including Allegheny County, contains a table of 205 wells and springs located in the county. Records of most of these wells drilled in the sand and gravel of the major valleys are included in the present report.

Owing to its commercial and industrial importance, Allegheny County has been the subject of a large number of published and unpublished geologic reports. Most of the earlier reports, beginning with that of H. D.

Rogers in 1836, were concerned with the geology of the coal resources of the county. Comparatively little study had been given to the occurrence of ground water until Piper began his field investigation in 1926. In the interval 1836-1926, many papers and bulletins were prepared on various phases of geology in Allegheny County. A selected bibliography is given at the end of this report.

Methods of Investigation

The investigation upon which this report is based was begun in May 1945. The first records of water levels in this region date back to 1929, when the city of Pittsburgh began a program of measuring water levels in a few unused commercial wells, and also in a number of shallow observation wells located in the Triangle area of downtown Pittsburgh. Between April 1929 and January 1937, city employees measured the depth to water in these wells during periods of high river stage, as part of a city flood-control study, but no systematic program of measurement was followed. Measurements were recorded only during periods of high river stage, and were discontinued after January 1937. Weekly tape measurements of water level in 12 of the city-owned wells were begun by the Geological Survey in May 1945, and have been continued to the present. Other unused wells found suitable for observation of non-pumping water levels were added to the group of city wells. Fluctuations of water level in representative wells of this group are shown in figures 8 and 9, page 36.

In addition to the weekly tape measurements in observation wells in Pittsburgh, an automatic water-stage recorder (see pl. 1) was installed in an observation well in the well field of the West View Municipal Authority. This well field is situated at the south end of Neville Island, in the Ohio

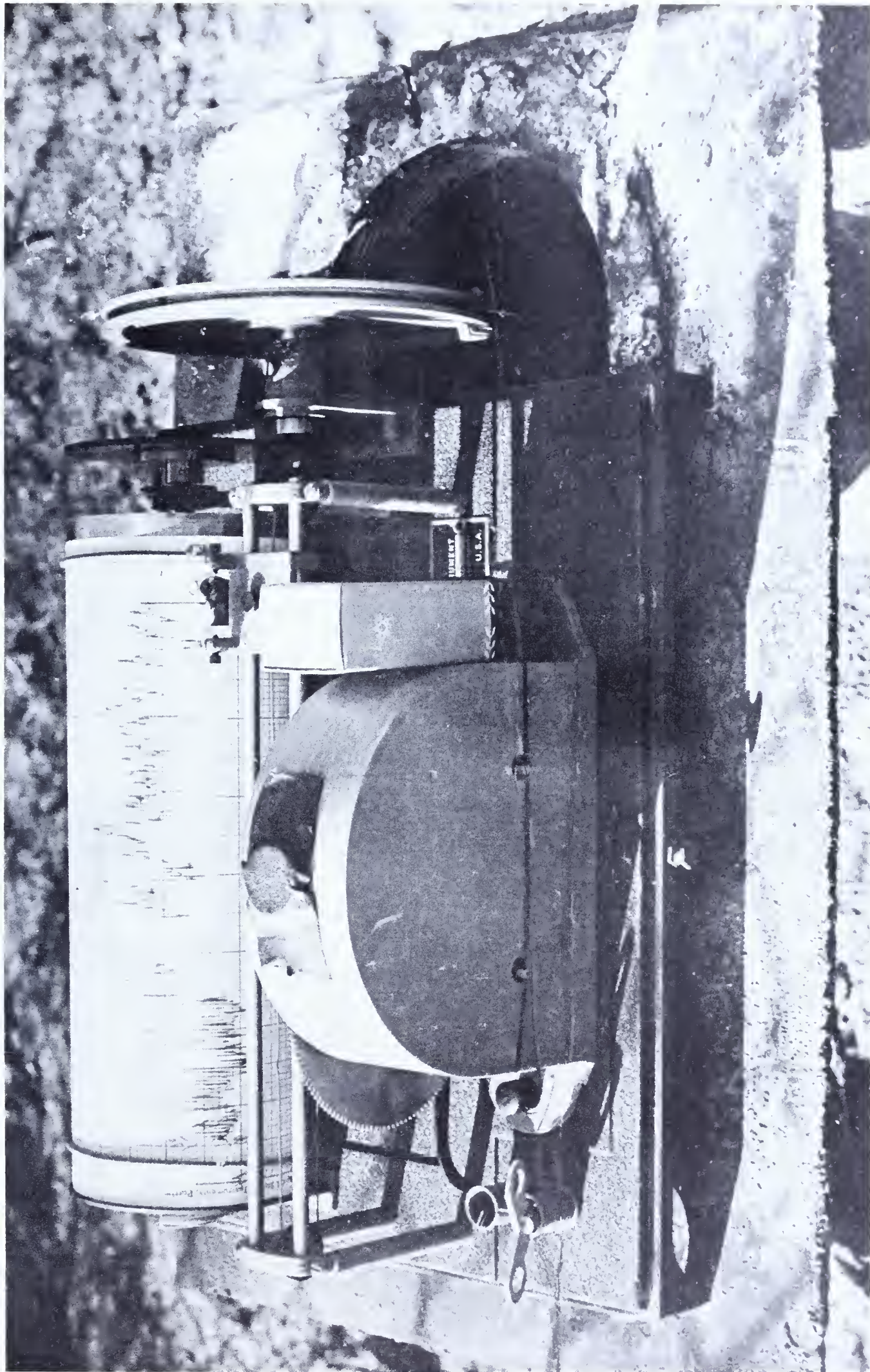


PLATE 1. Automatic water-stage recorder on observation well of the West View
Municipal Authority, Neville Island.

River, about 5 miles below the "Point" in Pittsburgh.

Samples of cuttings from recent borings along the Ohio and Allegheny Rivers within the county were examined, and surface elevations were determined from maps of the Army Engineers and of the City and County Planning Commissions. Extensive studies were made at nearly all the industrial plants and municipal waterworks using ground water within the limits of the valley fill in Allegheny County. Well-completion reports and logs were voluntarily submitted to the Geological Survey by all the major drilling companies in the area.

Acknowledgments

The authors are most grateful to all persons and concerns who gave generously of their time and efforts in order that the data for this report might be obtained. Mention of all the individuals who contributed toward the report would require many pages. Among those individuals who were especially helpful are Messrs. Chase and Beck of the West View Municipal Authority; L. S. Morgan, District Engineer of the State Department of Health; and E. C. Trax, chemist, of the McKeesport Water Bureau. Many of the drilling concerns and drillers, including R. H. Reinhold and F. C. Sturges of the Pennsylvania Drilling Company; H. J. Snyder, Ohio Drilling Company; J. R. Charles, Layne-New York Company; and Robert Keaton of the Keaton Drilling Company; and numerous individual drillers gave freely of their time and access to their files.

W. J. Murdock, Consulting Engineer; Park Martin, Director, Allegheny Conference on Community Development; the Chester Engineers; and Morris Knowles, Inc. supplied much information on various municipal and industrial

ground-water supplies. The engineering staffs of the Pennsylvania Railroad, Pittsburgh and Lake Erie Railroad, Pittsburgh Coke and Chemical Company, Pittsburgh Screw and Bolt Company, H. J. Heinz Company, Duquesne Light Company, Carnegie-Illinois Steel Company, Jones and Laughlin Steel Company, and the City and County Bureaus of Engineering gave copies of blueprints, drawings, and technical data invaluable to this project. The Pittsburgh office, Corps of Engineers, War Department, furnished maps, elevations, and test-boring data for the major river valleys.

The authors gratefully acknowledge the assistance by G. H. Ashley and R. W. Stone and later by S. H. Cathcart and R. C. Stephenson of the Pennsylvania Topographic and Geologic Survey. The ground-water work in Pennsylvania is under the general supervision of J. B. Graham.

GEOGRAPHY

Surface Features and Drainage

Allegheny County lies within the physiographic province known as the Appalachian Plateau. The surface has been eroded into a maze of irregular hills and sharp valleys in the stage of early maturity. Few remnants of the upland level representing the plateau surface have been preserved, and, except in the valleys of the three major rivers, flood plains have not been extensively developed.

Industries have been located chiefly on the flood plains bordering the larger rivers, whereas the hilly uplands are devoted chiefly to residential and agricultural areas.

The Allegheny River enters the county at the northeast corner and flows in a general southwesterly direction until it joins the Monongahela at Pittsburgh (fig. 1), page 5. The Monongahela, flowing north, is joined at

DEPARTURE FROM NORMAL PRECIPITATION,
IN INCHES

PRECIPITATION, IN INCHES

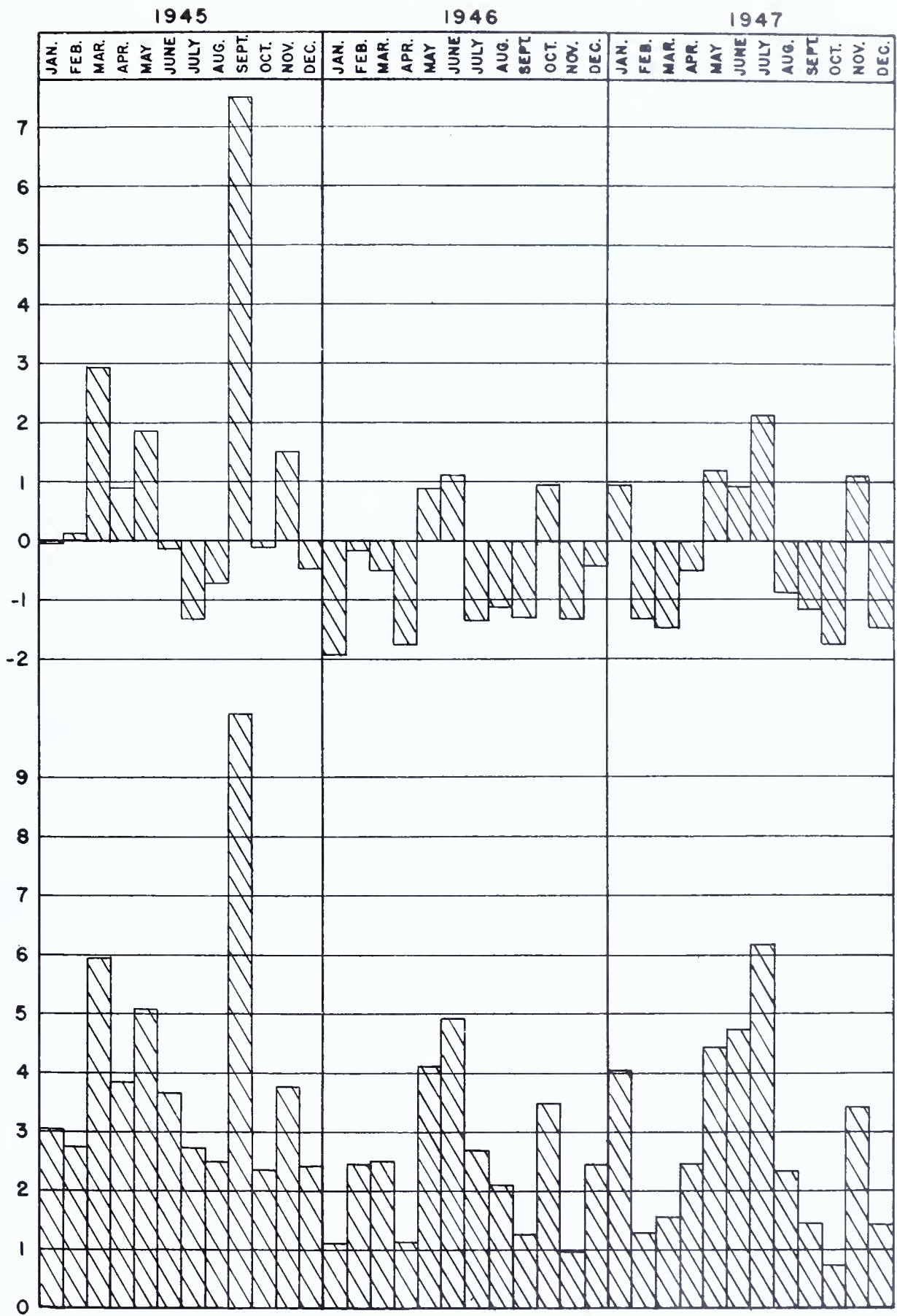


FIGURE 2. Graphs showing the monthly precipitation and the monthly departure from normal precipitation at Pittsburgh, for the period 1945-1947.

McKeesport by the Youghiogheny, flowing northwest. Turtle Creek flows westward and empties into the Monongahela a few miles north of McKeesport. The Monongahela then continues northwestward, joining the Allegheny to form the Ohio at the "Point" in Pittsburgh. Chartiers Creek, flowing north, enters the Ohio at McKees Rocks and is the only tributary of consequence to enter the Ohio in the county. The Ohio River leaves the county at a point about 15 miles northwest of Pittsburgh.

Climate

The average annual precipitation at Pittsburgh for the period 1870-1947 was 35.95 inches. This precipitation is generally spread rather evenly throughout the year, July being the wettest month with an average of 4.08 inches and November the driest with 2.31 inches. A graph of the monthly precipitation in Pittsburgh for the years 1945-47 is shown in figure 2.

The temperature in Allegheny County during the 74-year period 1873-1947, as shown by records of the Weather Bureau at Pittsburgh, averaged 52.6° F. The range in monthly means for the same period is from 31° F. in January to 74.3° F. in July. The relative humidity averages 59 percent at noon and 77 percent at 8 a. m.

In the humid East the temperature and precipitation are nearly cyclic in their regularity, in contrast to the climate irregularity of the arid portions of western United States. There are occasions, however, when extreme conditions cause devastating floods or periods of extended drought. These occasions are comparatively rare but, when they do occur, damages to the area run into the millions, owing to its high productivity in the industrial, commercial, and financial realms.

Mineral Resources

As the second most densely populated district in the State, development and production of Allegheny County's mineral resources have been carried on for many years, as would be expected. First in importance in the county is coal. Many coal seams of commercial importance crop out and underlie the surface of the ground, the most important being the Pittsburgh coal, which is purported to be the richest single mineral deposit in the world. According to the 11th Industrial Directory of the Commonwealth of Pennsylvania, Department of Internal Affairs, the value of bituminous coal mined in 1945 from all sources in Allegheny County was \$54,692,000, representing a total tonnage of 17,382,000.

Second in importance in the county are natural gas and petroleum. The first gas pool was discovered in 1884 and the first oil well was drilled in 1893. Although many millions of cubic feet of gas and many thousands of barrels of oil have been extracted in the past and were contributory factors in the expansion of this important industrial area, at the present time production from both these sources is very small in comparison with the past. Limestone, sandstone, and clay are other mineral resources of economic importance in Allegheny County. Extensive dredging for sand and gravel in the major stream valleys has occurred in the past, but for at least 10 years there has been no dredging of consequence in the rivers within the county limits.

Industry

The industrial position of Allegheny County rests upon such major industries as coal, steel and iron, glass, electrical products, aluminum, safety equipment, food, plumbing supplies, and others, many of which now

use or may develop ground-water supplies where conditions are favorable. There are about 2,000 manufacturing establishments in the county, and the value of their finished products was estimated at more than \$2,160,000,000 for 1945. In 1943 the county had an effective buying income of more than \$2,000,000,000, ranking sixth among all counties of the United States in total volume of retail sales, and sixth in effective buying power.

The industrial use of ground water, with a table of use by types of industry, is described in greater detail in the section entitled Industrial Supplies.

Population

The population of Allegheny County, according to the Bureau of the Census, was 1,411,539 in 1940 and was estimated to total about 1,550,000 in 1946. The largest city and county seat of Allegheny County is Pittsburgh, with a population estimated at 694,000 in 1946. It is the tenth largest city in the Nation. There are three third-class cities in the county -- McKeesport, with a population of 55,355; Duquesne, 20,693; and Clairton, 16,381. Boroughs having a 1940 population of more than 10,000 are Wilkesburg, 29,853; Homestead, 19,041; Braddock, 18,326; McKees Rocks, 17,021; Swissvale, 15,919; North Braddock, 15,679; Munhall, 13,900; Dormont, 12,974; Carnegie, 12,663; Coraopolis, 11,096; and Bellevue, 10,488. Comprising the remainder of the county are 51 townships and 74 boroughs. There are more than 3,000 farms in the county, covering about one-third of the land area. The number of people in Allegheny County utilizing ground water and the tabulation of municipal ground-water systems will be discussed in the section entitled Public Supplies.

Transportation

Transportation by river, rail, highway, and air is well developed in the county. The three large rivers -- Ohio, Allegheny, and Monongahela -- provide the cheapest of all modern transportation, by boat and barge. The city of Pittsburgh is the largest inland port in the United States, on the basis of shipping tonnage. The county is served by five railroads and four air lines.

GEOLOGY

Stratigraphy*

Cropping out in Allegheny County are gently southwestward dipping rocks ranging from the Allegheny group of Pennsylvanian age to the middle part of the Washington group of Permian age. Pleistocene and Recent clay, sand, and gravel mantle these rocks in the major river valleys. The beds exposed in Allegheny County are subdivided as follows:

Quaternary system:

Permian system:

Dunkard series--Washington group

Pennsylvanian system:

Upper Pennsylvanian series--Monongahela group

Conemaugh group

Allegheny group (upper portion)

The aggregate thickness of the consolidated rocks listed in Allegheny County is about 1,325 feet. The greater part of the strata are shale and sandstone, most of which carry plant fossils and apparently are of fresh-water origin. With them are associated thin beds of clay and fresh-water limestone. Occasional thin members of limestone contain marine fossils and indicate temporary

*The U. S. Geological Survey classifies the Washington as a formation of the Dunkard group; the Pennsylvanian as a series of the Carboniferous system; and the Monongahela, Conemaugh, and Allegheny as formations of the Pennsylvanian series.

return of sea waters. Altogether there are four or five thin marine limestones, and about 15 beds of coal ranging from 6 inches to 8 feet in thickness.

The Upper Freeport coal, a persistent coal seam of the Allegheny group, is the oldest coal seam exposed in the county. This seam occurs in the extreme northeast corner along the Allegheny River. The Conemaugh group is present at the surface in most of the area north of the Allegheny and Ohio Valleys, and is also exposed in the eastern part, except for the hilltops, between the Allegheny and Monongahela - Youghiogheny Valleys. West of the Ohio, the Conemaugh is present over most of Crescent and Moon Townships. The remainder of the area west of the Ohio and Monongahela Rivers and that area between the Monongahela and Youghiogheny Valleys is underlain by the Monongahela group. The Washington group, the youngest bedrock exposed in the county, occurs in limited exposures in southern Fayette, Upper St. Clair, and Bethel Townships.

Unconsolidated alluvium, consisting of clay, sand, and gravel, was deposited in the major stream valleys during the Pleistocene epoch. In the Allegheny and Ohio Valleys this material is of fluvioglacial origin. In the valleys of the Monongahela and Youghiogheny Rivers and Chartiers and Turtle Creek a higher percentage of clay is mixed with the sand and gravel than in the other major valleys. The deposits in these valleys accumulated when the Allegheny River was choked with fluvioglacial material which blocked normal drainage.

For detailed information describing the rock formations and geologic history of Allegheny County, the reader is referred to the reports under General Geology in the Bibliography at the end of the report.

Sources of Fresh Water in Allegheny County

Following are listed the principal rocks in Allegheny County that yield fresh water to wells. They differ greatly in productivity, and the most important aquifers are described individually in the next section:

Quaternary

- Pleistocene and Recent
Alluvium (Valley fill)

Pennsylvanian

- Monongahela group
 - Uniontown limestone
 - Benwood limestone
 - Fishpot limestone
 - Pittsburgh sandstone
 - Pittsburgh coal

Conemaugh group

- Upper Pittsburgh limestone
- Connellsville sandstone
- Little Clarksburg coal and Clarksburg limestone
- Morgantown sandstone
- Birmingham shale
- Duquesne coal
- Ames limestone
- "Pittsburgh red beds" - clays
- Saltsburg sandstone
- Bakerstown coal
- Cambridge limestone
- Buffalo sandstone
- Brush Creek coal
- Mahoning sandstone

Allegheny group

- Upper Freeport coal and limestone
- Butler sandstone
- Freeport sandstone
- Kittanning sandstone

Bedrock Units and Their Water-Bearing Properties

In general, water contained in the bedrock at depths of more than 100 feet below the valley bottoms is too highly mineralized for ordinary uses. The oldest rocks in the county utilized as sources of fresh water occur in the Allegheny group. In the southern part of the county this group lies at

too great a depth to be of value as a source of ground water, but a few wells in the northeastern part of the county penetrated the Kittanning, Freeport, and Butler sandstones and the Upper Freeport coal and limestone. None of these is important as a source of ground water in Allegheny County; the reported yields are small, and the water may contain considerable dissolved mineral matter.

The overlying Conemaugh group contains five rather persistent sandstones which are water-bearing to a variable extent over the county. These are the Mahoning, Buffalo, Saltsburg, Morgantown, and Connellsville sandstones, in ascending order. The lowermost, the Mahoning sandstone, about 500 feet below the Pittsburgh coal, is tapped by many wells north of the Allegheny and Ohio Valleys and by a number in Penn Township. South and west of Pittsburgh it is of little consequence as an aquifer. The typical Mahoning sandstone is gray, medium or coarse-grained, and is commonly separated into two sandstone beds with shale between. These beds generally thicken inversely to each other, and the total thickness is 20 to 100 feet. Where the sandstone is coarse and lies below drainage level, a yield of at least 25 gpm can ordinarily be expected, but a yield as high as 100 gpm has been reported for one well in eastern Penn Township.

The Buffalo sandstone, at an average depth of about 450 feet below the Pittsburgh coal, is important as an aquifer only in the northern part of the county. The type phase of the Buffalo is a coarse-grained or conglomeratic sandstone. Within the county, it ranges in thickness from 20 to 60 feet. Little is known of the water-yielding capacity of the sandstone, but yields in excess of 20 gpm have not been reported.

The Saltsburg sandstone lies from 300 to 400 feet below the Pittsburgh coal. It is a white or gray massive sandstone 30 to 80 feet thick, which in places becomes thin-bedded and grades into a bluish-gray sandy shale. This member is known to supply water at the rate of 40 gpm to some wells and may, with proper drilling and development, yield even larger amounts. Its water-bearing properties may change rapidly within short distances. It appears to be most favorable for wells in the region north of the Ohio and Allegheny Valleys and in the western part of the county.

The Morgantown sandstone is probably the best of the consolidated-rock aquifers from the standpoint of consistent supply. It is separated from the overlying Connellsville sandstone by the Little Clarksburg coal and Clarksburg limestone and lies about 150 to 200 feet below the Pittsburgh coal. The Morgantown is typically a compact, fine-grained thick-bedded micaceous sandstone. Its maximum thickness of about 120 feet is attained in the northwest part of the county. Drilled wells tapping it in the western part of the county have been known to yield as much as 75 gpm. However, the reported average yield of wells is approximately 30 gpm.

The Connellsville sandstone lies from 30 to 60 feet below the Pittsburgh coal. It is coarse-grained, micaceous, and moderately permeable in the southwest part of the county, and ranges from 20 to 75 feet in thickness. In the southern part of the county drilled wells yield as much as 25 gpm without depletion. The Connellsville either has been eroded away or is too thin or too high an elevation to be water bearing north of the Allegheny-Ohio Valley.

The Monongahela group, which overlies the Conemaugh, is below drainage

level only in the southern part of the county. The Uniontown and Benwood limestones are the only persistent water-bearing strata in this group. These are unreliable aquifers, and many wells have passed through both without obtaining water in sufficient quantity for even small domestic supplies. Farther south, in Washington County, however, at least three wells have shown capacities in excess of 20 gpm. In northern Washington County, which adjoins Allegheny County on the south, the Uniontown and Benwood limestones ordinarily yield adequate domestic supplies.

Valley-Fill Deposits and Their Water-Bearing Properties

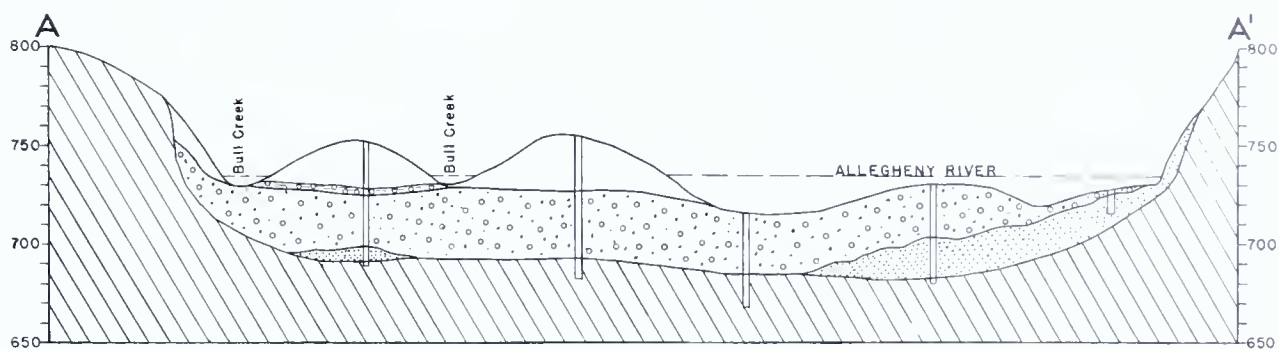
The alluvium of the Allegheny and Ohio Valleys in Allegheny County consists largely of glacial outwash gravel, sand, and clay of Pleistocene (Wisconsin), and Recent age. Pebbles of crystalline rock transported from considerable distances north of the area are included with pebbles of resistant sandstone of local origin in these valley deposits. The finer material is likewise of both foreign and local origin. Most of the gravel in the Pittsburgh vicinity will pass a 2-inch screen, but boulders are not uncommon. The material is well sorted in some places, but more commonly the grain size varies considerably. The permeability of the deposits may change within relatively short distances owing to changes in grade size of the sediments. The differences in yield reported for similarly constructed wells in the valley sediments are due primarily to differences in permeability of these sediments rather than to variations in the thickness of the aquifer. Localities underlain by coarse, well-sorted deposits are naturally the sites of the most productive wells.

The average maximum thickness of the valley alluvium is about 60 feet. Normally, sand and gravel constitute the basal part of the alluvium and is

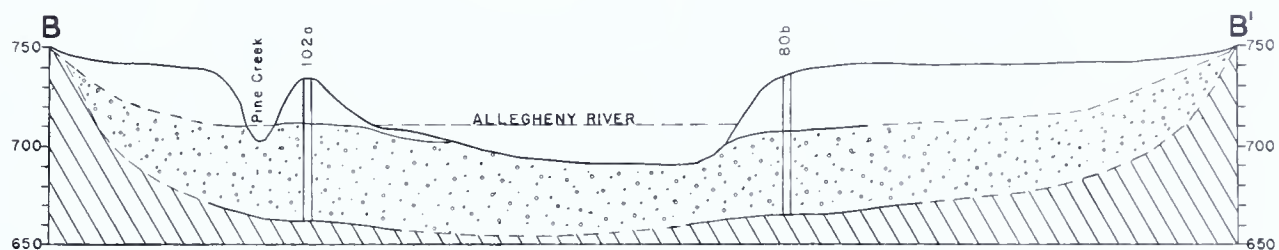
overlain by Recent alluvial fill ranging in thickness from 0 to 25 feet. In parts of the present stream bed the topmost member of the alluvium is a layer of very fine silt which to some extent is transitory and is probably scoured during floods and redeposited as high water stages decline. Characteristic sections across the Allegheny and Ohio Valleys are shown in figures 3 and 4. Laterally, these alluvial deposits extend the width of the pre-Wisconsin stream valleys, which are wider than the present streams. The bedrock floor of the valleys is relatively flat and lacks the secondary notched profile characteristic of some valleys in northwestern Pennsylvania, New York, and Ohio. In Allegheny County the thickness of water-bearing sand and gravel remains fairly constant across the valleys; however, the sediments thin rapidly near the valley walls. Higher terrace gravels that occur along the sides of some of the valleys may represent older glacial outwash. These valley-wall gravels are poorly sorted and relatively impermeable, so are not important as a source of ground water.

Declining from 682 feet above sea level at Tarentum on the Allegheny River to 661.5 feet immediately above the junction of the Allegheny and Monongahela Rivers, the old valley floor in the bedrock shows an average gradient of 1 foot per mile. Continuing down the Ohio 13 miles from the Allegheny-Monongahela junction, the ancient valley floor is found at an elevation of 651 feet. The average gradient is 0.8 feet per mile in this distance. At no place in the Allegheny and Ohio Valleys in the county is bedrock recorded at a depth in excess of 85 feet below river level. Figure 5 shows sections in the valley alluvium in the Triangle area of Pittsburgh. The thickness of valley sediments underlying the Triangle area of downtown Pittsburgh is shown by surface and bedrock contours on plate 2. Plate 3

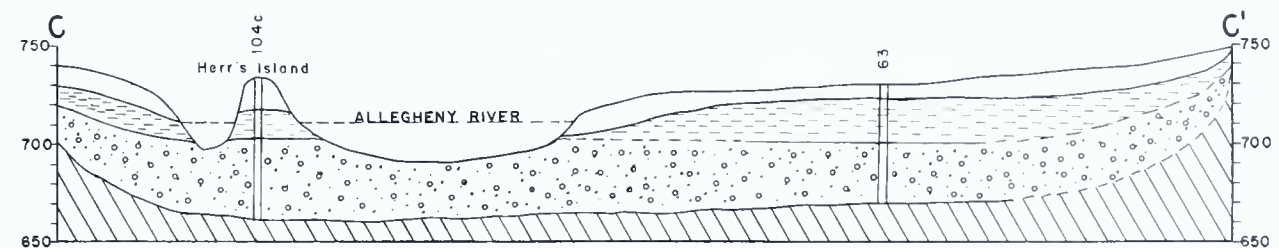
EXPLANATION



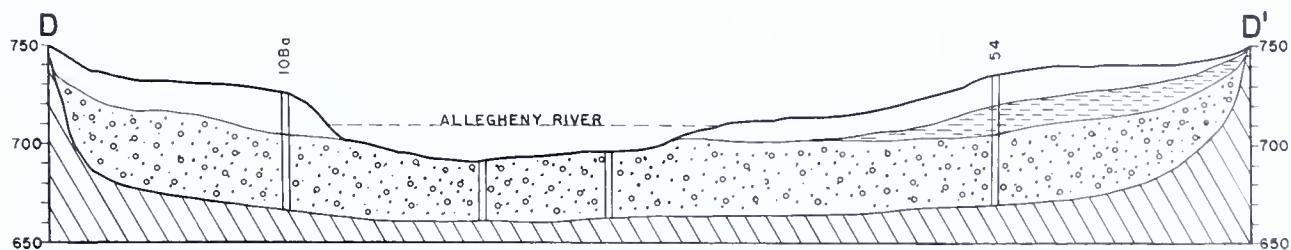
Section across Allegheny Valley at Tarentum



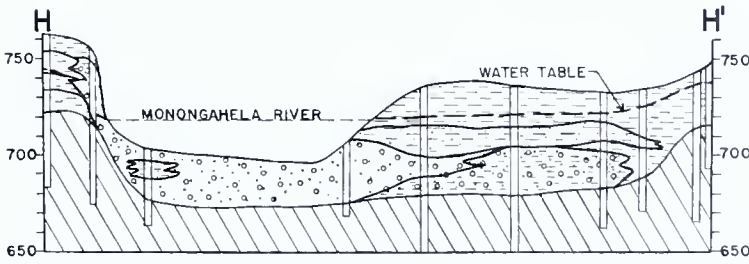
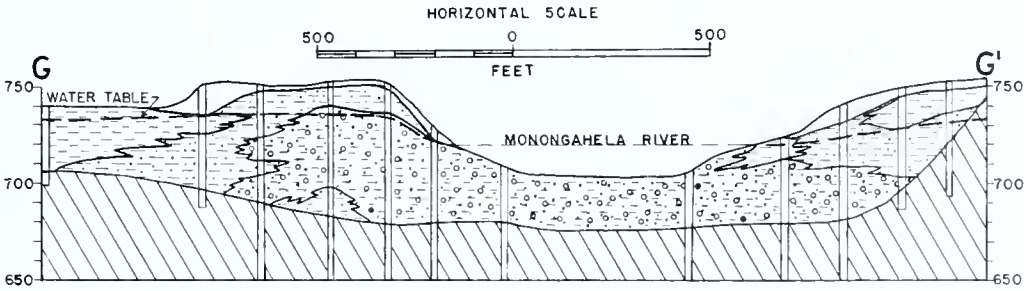
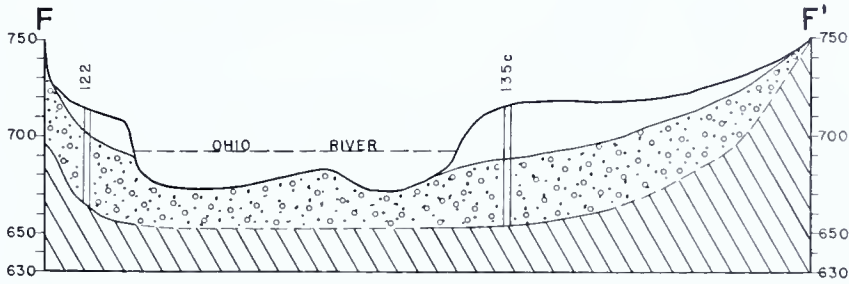
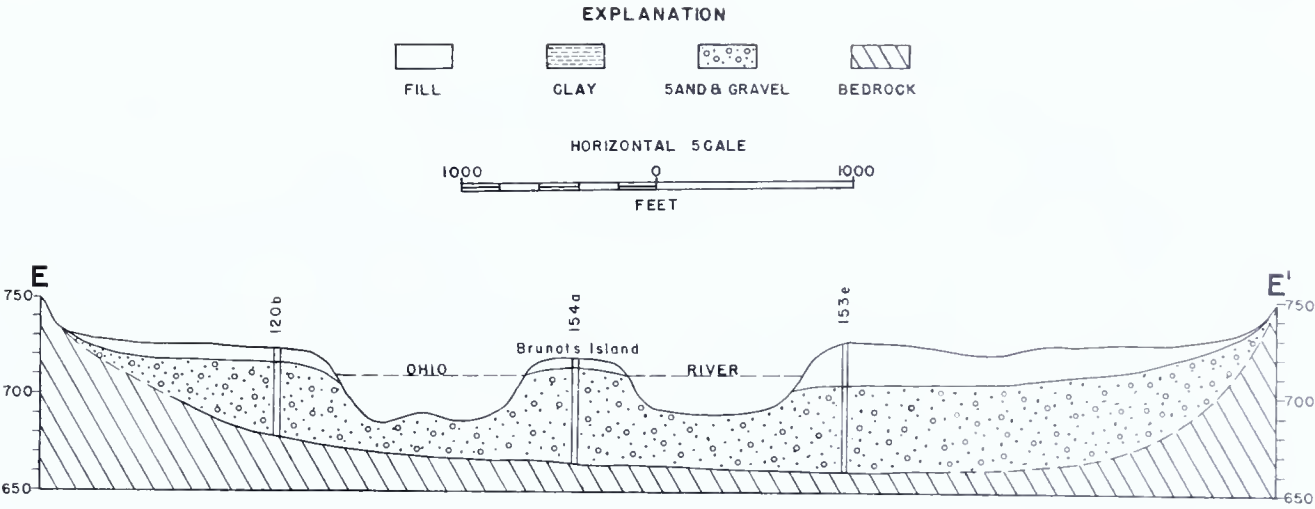
Section across Allegheny Valley at 54th St., Pittsburgh



Section across Allegheny Valley at lower end of Herrs Island, Pittsburgh



Section across Allegheny Valley at 16th St. Bridge, Pittsburgh



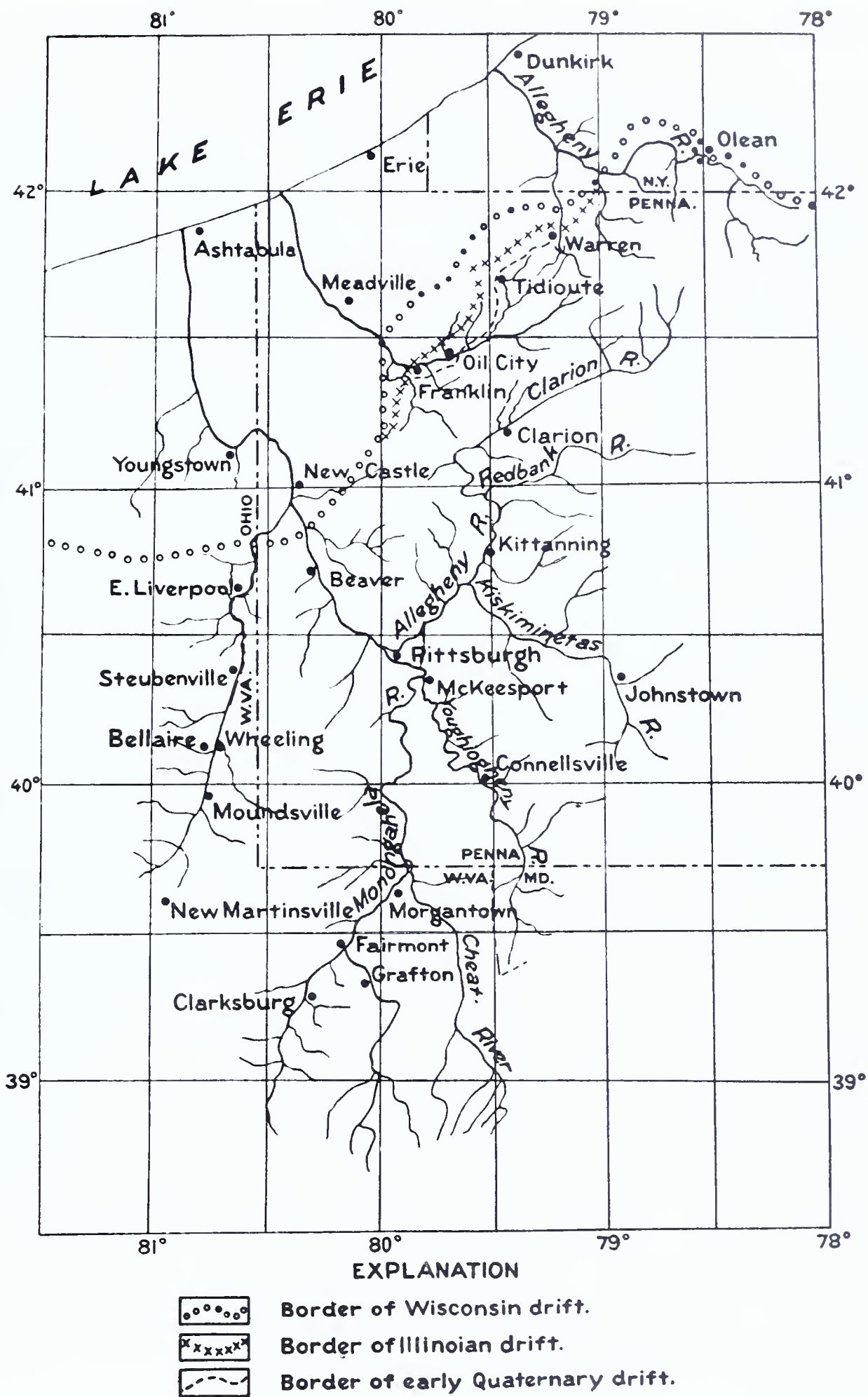


FIGURE 6. Sketch map showing probable preglacial drainage of Western Pennsylvania (after Leverett).

shows the thickness of the permeable gravel for the same area by contours on bedrock and on the surface of the gravel.

As compared with sediments in the Allegheny and Ohio Valleys, the alluvium of the Monongahela and Youghiogheny Rivers and Chartiers and Turtle Creeks has a much higher percentage of silt, with a corresponding reduction in permeability. The valley deposits of these streams are believed to be derived from erosion of bedrock cropping out in their respective drainage areas, and do not contain glacial debris from ice sheets, which terminated to the north. During one or more periods of glaciation, ice blocked the flow of the Allegheny River and other streams in northwestern Pennsylvania. The direction of flow of these north-flowing streams in the area of glaciation was reversed (fig. 6). Contemporaneously with the disruption of direction of flow, north-flowing streams south of the ice border were ponded. This ponding reduced the gradient of the streams, causing valley deposition to levels corresponding generally with the fluvio-glacial terraces of the river draining the glaciated area to the north.

A well at Floreffe on the west bank of the Monongahela below Elizabeth shows no more than 6 feet of clean, coarse sand and gravel, and at Clairton the maximum recorded thickness is 10 feet. The remainder of the alluvium is a mixture of sand, silt, and clay and occasionally some gravel. The city of Duquesne is supplied by eight wells drilled into the valley alluvium of the Monongahela River, and the high productivity of these wells indicate that relatively large yields may be developed from channel-like deposits of gravel occurring in the normally poorly sorted valley sediments. Because of the poor yield of most municipal and industrial wells drilled in the Monongahela Valley, however, fewer well records are available than in the

Allegheny and Ohio River Valleys. The location of highly productive water-bearing channels in the Monongahela Valley perhaps can be best determined by earth-resistivity surveys in conjunction with test drilling.

Within the county the maximum thickness of the Monongahela Valley alluvium is 65 feet. Figure 4, page 18, shows sections across the valley at Dravosburg and Elizabeth. The pre-Wisconsin Monongahela Valley floor has a gradient of about 0.8 feet per mile from the new bridge at Elizabeth, 22.8 miles upstream from Pittsburgh, to the junction of the Monongahela with the Allegheny.

Structure

The Pennsylvanian and Permian rocks that crop out in Allegheny County have a low regional dip toward the southwest. There are, however, a number of subparallel folds of low amplitude which strike about N. 30° E. and tend to obscure the regional dip. These folds become progressively sharper and more nearly parallel toward the eastern boundary of the county. There is little obvious relation between rock structure and stream flow. This would indicate that the direction of stream flow was determined before the present topography came into existence and that stream erosion kept pace with uplift and folding of the rocks.

Geologic History

The rocks of Pennsylvanian age, the principal bedrock of this area, are chiefly fresh-water deposits laid down on a broad, flat-lying continental mass, inland from the sea. At the close of the Paleozoic era, a mountain-making disturbance in the earth's crust, the Appalachian revolution, resulted in large-scale folding of rocks throughout Pennsylvania, the intensity dying out to the west. This folding produced a series of minor sub-

parallel folds in the Allegheny County area. This disturbance initiated a prolonged period of uplift and erosion. The flat-topped hills in the Pittsburgh area, 1,200 to 1,300 feet above sea level and 500 to 600 feet above river levels, are considered to be remnants of the Allegheny peneplain, the oldest erosion surface identified in the area. Evidences of a younger and less prominent erosion cycle, the Worthington, along the borders of the valleys at about 1,100 feet above sea level, have largely been obliterated by subsequent erosion.

Downcutting of streams in Tertiary time produced a system of broad valleys about 350 to 400 feet below the Allegheny peneplain and 200 feet above the present river levels. This erosion stage produced a valley level known as the Parker strath. The stream pattern of western Pennsylvania which formed the Parker strath differed notably from that of the present day (see fig. 6, p. 19) in that the drainage went northward into the present St. Lawrence Basin rather than westward and southward into the Mississippi valley. During the Illinoian stage of glaciation in the Pleistocene epoch the Allegheny River was choked with fluvioglacial outwash, resulting in the ponding of tributary streams. The clays, sands, and gravels which accumulated locally in the valleys of the Monongahela and Youghiogheny Rivers and other streams to the south are known collectively as the Carmichaels formation. Active erosion following Illinoian glaciation cut down 250 feet below the gravel-covered Parker strath, excavating channels to a depth of 50 feet or more below present stream levels.

Glaciation during the Wisconsin stage again resulted in a filling of the valley bottoms with clay, sand, and gravel, this time to a depth of 130 feet above the bedrock. Once again, ponding occurred and influenced

sedimentation along the Monongahela River and its tributaries. Since Wisconsin time the rivers have attacked and eroded the valley-fill sediments. The streams have cut 80 feet down through these deposits to establish flat terraces near the present river levels. The erosion levels and the occurrence of valley-fill deposits as described above are shown by an idealized cross section (fig. 7). It is on the Wisconsin and Recent terraces that many industrial plants are situated, and from the underlying valley-fill material that most of the ground water in Allegheny County is obtained.

GROUND WATER

Principles of Occurrence

The following general discussion on the occurrence of ground water has been adapted chiefly from Meinzer (1923, pp. 1-200), and for a more comprehensive discussion the reader is referred to his report.

Ground water is that water which penetrates the surface of the earth and fills the interstices of the rocks in the zone of saturation below the water table. Ground water, as much as surface water, is a part of the natural drainage system and moves by gravity toward lower levels; but instead of flowing freely, it must move through the rock interstices, fractures, or solution channels. A formation, group of formations, or part of a formation that is water bearing is known as an aquifer.

The porosity of a rock is its property of containing interstices or voids. Permeability is the capacity of a water bearing material to transmit water through these voids. The size of the interstices in porous rock is important with respect to the permeability of the rock. Free movement of ground water through a porous rock requires that the interstices be sufficiently large so that the molecular attraction between the walls and

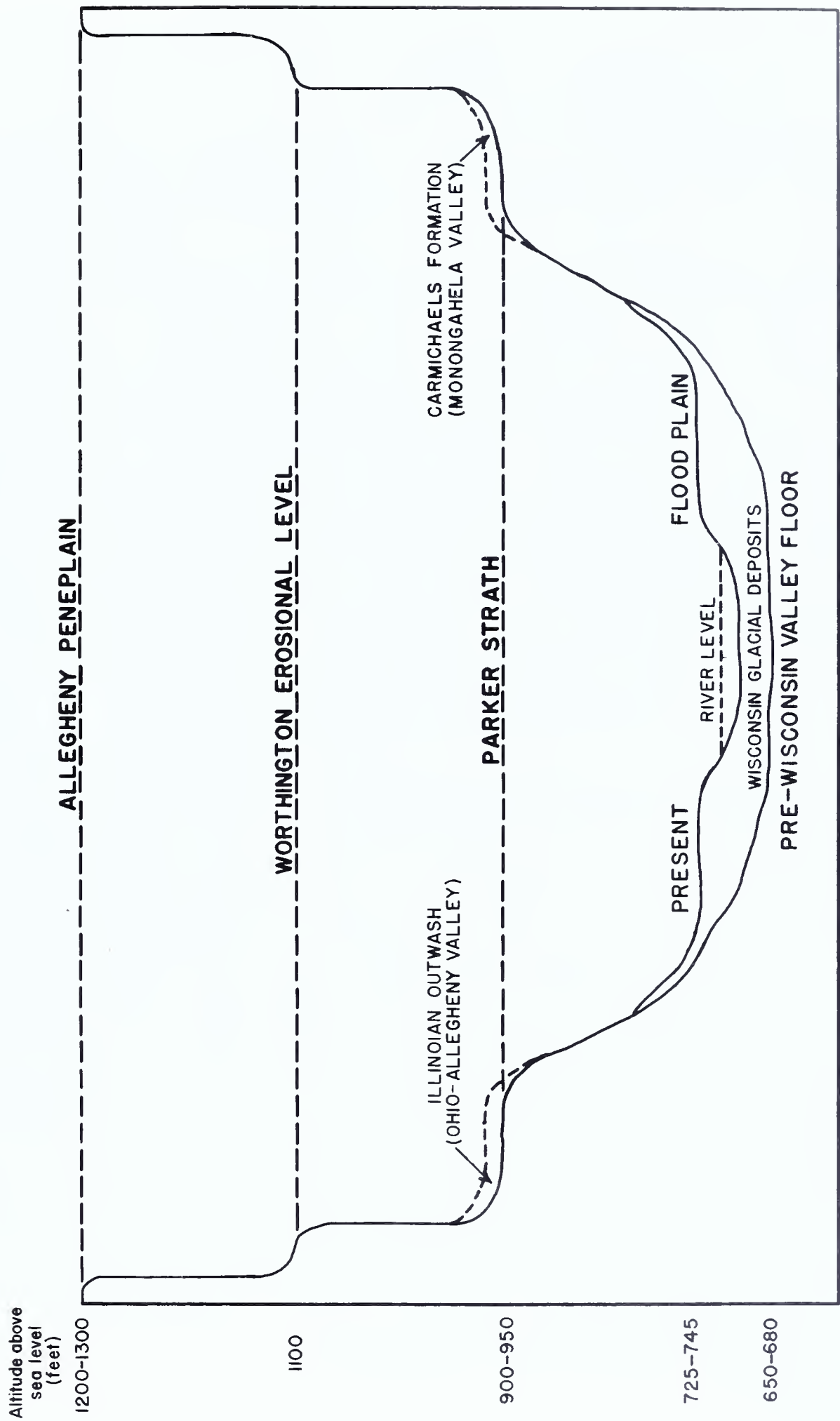


FIGURE 7. Idealized valley cross section showing erosion levels and the position of valley-fill deposits in Allegheny County.

the molecules of water is less than the force of gravity or hydrostatic pressure acting upon the water. A permeable or pervious rock, with respect to subsurface water, is one having a texture that permits water to move through it perceptibly under the pressure gradients that ordinarily exist in nature.

The rate of flow of subsurface water is determined by the permeability of the aquifer, the temperature of the water, and the hydrostatic pressure gradient which is governed by the slope of the water table or, in artesian areas, by the slope of the artesian-pressure (piezometric) surface. The water in the interstices of the permeable rocks in the zone of saturation is, as a rule, moving very slowly and very steadily. In nature, rates of more than a few feet a day are exceptional. In the recognized water-bearing formations, from which wells obtain their water supplies, the natural rate of movement of the ground water is generally not greater than 5 feet a day and not less than 5 feet a year.

When a well penetrates a water-bearing formation and the water does not rise above the level at which it is struck, the ground water is said to occur under unconfined or water-table conditions, and the water level marks the position of the water table at that place. In contrast, when the water level in a well rises above the zone of saturation, the ground water is said to occur under confined or artesian conditions. Under artesian conditions, the water is confined between two relatively impermeable strata, and is therefore contained under pressure due to differences in elevation at the points of recharge and withdrawal. An intermediate or "semiartesian" condition may occur where the upper confining stratum is not continuous but is of sufficient extent to prevent direct connection

between the water tapped by the well below the confining stratum and that at the water table. Under these conditions the water in the well generally rises about to the level of the water table. Another modification of confined conditions occurs where the upper confining bed is appreciably permeable or "leaky," in which case the water may not rise as far above the zone of saturation as it would if the confining bed were more nearly impermeable.

In ground-water studies, certain terms have been found useful in describing the quantitative hydraulic characteristics of a given aquifer. The ability to transmit water and the storage characteristics of the water-bearing materials are determined by measurements of their coefficients of permeability and storage, respectively. The coefficient of permeability is defined by Meinzer as the rate of flow, in gallons a day through 1 square foot of cross section of the aquifer under a hydraulic gradient of 1 foot drop per foot of distance traveled by the water at a temperature of 60° F. For field work the coefficient of transmissibility is useful. It is defined as the coefficient of permeability, corrected for the prevailing temperature and multiplied by the average saturated thickness of the formation in feet. The coefficient of storage is the amount of water in feet released from each vertical column of the aquifer with a basal area of 1 square foot when the water level is lowered 1 foot. For water-table conditions, this is essentially equivalent to the specific yield, which is the amount of water, expressed as a fraction of a cubic foot, that will drain by gravity from 1 cubic foot of the saturated material.

A measurement of the depth to water level in a well made when no water is being pumped is the so-called static water level of the well. The pump-

ing water level is that measured while the well is being pumped. The measurements may be made by means of steel tapes or air lines. The difference between the static level and the pumping level in a well at a given rate of discharge is the drawdown of the well at that rate. The specific capacity of a well is the quantity of water which is yielded by a well for each unit of drawdown in the well, generally expressed as gallons a minute per foot of drawdown.

Development and Uses of Ground Water

In the area described by this report, the principal supply of ground water is obtained from the sands and gravels underlying the major stream valleys. Those sediments occurring in the Ohio-Allegheny Valley and tributaries to the north are of glacial origin, whereas those of the Monongahela-Youghiogheny Valley in the southern part of the county are of fluvial origin, derived locally within the immediate drainage area. All are probably of Pleistocene (Wisconsin) and Recent age.

Recharge of the valley-fill sediments is derived from precipitation and river infiltration. Where the aquifer is heavily pumped, water levels at and near points of withdrawal are lowered considerably below the normal pool stages of the rivers. The depth and volume of water in the three major rivers in the county are controlled by a series of locks and dams to the limits of their navigable lengths. The elevation of the water surface between one dam and the next adjoining dam is known as the stage for that particular segment of the river. When that stage is within certain defined limits of elevation, it is known as pool stage. These pool stages are kept at relatively constant levels except when there is danger of floods, at which times the dams are raised or lowered to control the volume of water

in the river channel. When the rivers rise beyond pool stage, they are in flood stage. The effect of the river stages on ground-water levels in the gravels underlying the river valleys is very similar to that of a lake acting as a source of recharge to nearby gravels. Consequently, there is a continual adjustment in the equilibrium between the river and the ground-water levels. According to reports from several engineers of municipal and industrial installations, static water levels in wells 20 to 30 years ago were approximately equal to or slightly above the stages of the rivers at that time.

The earliest ground-water supplies used in Allegheny County were obtained from springs, of which there are a number having small perennial discharge, suitable for farm and domestic supplies. Most of these springs issue from consolidated rocks where layers of limestone or sandstone are exposed on hillsides or valley walls. Numerous small springs also occur at the base of coal outcrops, but the quality of the water from such springs is not generally suitable for human or stock consumption.

Wells dug in unconsolidated sediments were common before 1900 and numerous wells were drilled in the consolidated rocks prior to that date. There seems to have been an early prejudice against large-scale use of ground water from relative shallow gravels occurring in the major stream valleys, for many of the oldest wells in the valleys were drilled through the gravels in order to obtain water from the underlying bedrock. By the turn of the century there were, however, a few drilled gravel wells in the Triangle area of the city of Pittsburgh and elsewhere in the county.

Most gravel wells in the downtown area of Pittsburgh recorded in this report were drilled before 1930. Similarly, many municipalities in the

main valleys of the county had drilled wells into the valley gravels by 1930. The use of large quantities of ground water by industries located along the major rivers has taken place only within the past two decades. This relatively recent and large increase in the use of ground water by Allegheny County industries may be due in large part to the recognition of the advantages of ground water for cooling uses. During this time, considerable improvement has been made in the construction of wells, and knowledge of areas favorable for the development of large ground-water supplies has become more widespread.

During 1946 and 1947, an extensive survey of the ground-water use in the county was undertaken. An attempt was made to visit each municipality and industry in the county deriving water from wells drilled into the sands and gravels of the major river valleys. A very small part of the ground water used in Allegheny County comes from consolidated rocks. It appears that at least 95 percent of the municipal and industrial ground-water supplies obtained in the county are derived from gravels in the major river valleys. Consequently, the scope of this report, as indicated earlier, has been restricted largely to a description and inventory of ground-water use in these valleys. During the course of the survey, an attempt was made to determine the number of hours each day and the approximate number of days each year that each municipal and industrial well is operated. Consequently, it is believed that the statistical records of ground-water use, as given below, are accurate within relatively narrow limits for those wells reported.

The following computations of ground-water use are based on data obtained for nearly all large municipal and industrial wells currently in use in the area investigated. About 84 million gallons of water is withdrawn

daily during the summer months from the valley alluvium within Allegheny County. Of this total, about 80 million gallons is pumped from the glacial gravels of the Allegheny-Ohio Valley. Wells within the limits of the city of Pittsburgh pump approximately 32.5 million gallons a day, and of this total about 12.7 million gallons a day is withdrawn from the Triangle district, which has an area of about 0.4 square mile. Wells in the Monongahela Valley and in the valleys of the smaller tributaries yield a total of about 4 million gallons a day.

Public Supplies

Ground-water use by municipalities in the county has grown to a total of 15.0 million gallons a day. Plate 4 (in pocket) shows the location of municipalities and boroughs in Allegheny County using ground water. The West View Municipal Authority, located at the southeast end of Neville Island in the Ohio River a few miles downstream from Pittsburgh, is the largest consumer. In the past years, the West View Municipal Authority has acquired the Ross Township Authority, and the total pumpage in the summer now exceeds 7 million gallons a day. Water is supplied to 90,000 consumers and many large industrial plants. Twenty wells, located in the back channel of the Ohio River, are pumped as a unit, and 34 wells in the main channel are likewise pumped as a unit. The system also includes three gravel-packed wells. Augmenting the yield from drilled wells is a water collector 13 feet in diameter, sunk by caisson methods into the unconsolidated sand and gravel. This collector has 15 perforated horizontal pipes extending radially into the aquifer, and is the only installation of its kind in the county.

On the south side of the Ohio, but farther downstream, is the borough of Coraopolis. From three 18-inch wells and a group of 20 wells pumped as a unit, the borough pumps 1,640,000 gallons a day to supply a population of 13,000. Across the river, along the north side, is the borough of Edgeworth, where the pumpage amounts to half a million gallons a day from five wells connected to one system. This supplies the borough of Leetsdale and Sewickley and Leet Townships, in addition to the borough of Edgeworth.

Between Pittsburgh and the point where the Ohio River leaves the county, the municipal ground-water usage totals over 9 million gallons a day. A population of about 110,000 is supplied in this area.

Seven municipalities within the Allegheny Valley derive their water supplies from the valley deposits. Upstream from Pittsburgh, Shaler Township pumps 550,000 gallons a day from three wells. From a like number of wells Etna Borough pumps 1,200,000 gallons a day. Sharpsburg obtains 2.6 million gallons daily from a system of 12 wells pumped as a unit. Aspinwall pumps a daily supply of 380,000 gallons from two wells which operate alternately. The Harmar Water Company, located at Acmetonia, pumps about 40,000 gallons a day. Located about a mile farther upstream is the borough of Cheswick, with two wells yielding a total of 80,000 gallons a day. Springdale Borough, 16 miles up the Allegheny from Pittsburgh, requires about 200,000 gallons daily. The borough of Oakmont also owns three wells which are used as a stand-by supply, the regular supply being obtained from the Allegheny River. Thus 38,000 people in the Allegheny Valley depend upon ground water for their needs. The total pumpage approaches 5 million gallons daily.

The city of Duquesne is the only municipality in the Monongahela Valley in Allegheny County that uses ground water. Serving a population of 22,000, the municipality pumps 1.4 million gallons a day.

The following table lists the municipal ground-water supplies:

ALLEGHENY COUNTY MUNICIPAL GROUND-WATER SUPPLIES, 1946

<u>No.</u>	<u>Municipality</u>	<u>Population Served</u>	<u>Pumpage</u> ¹	<u>No. of Wells</u>
1.	Springdale Borough	5,000	0.20	3
2.	Cheswick Borough	1,300	.08	2
3.	Harmar Water Company	750	.04	1
4.	Aspinwall Borough	4,800	.38	2
5.	Sharpsburg Borough	9,000	2.60	12
6.	Etna Borough	7,000	1.20	3
7.	Shaler Township	10,000	.55	3
8.	West View Authority	90,000	6.46	60
9.	Edgeworth Borough	6,000	.50	5
10.	Coraopolis Borough	13,000	1.64	23
11.	Duquesne, City of	<u>22,000</u>	<u>1.40</u>	<u>8</u>
	TOTAL	168,850	15.05	122

¹ Pumpage figures are given in million gallons a day.

Industrial Supplies

The total industrial use of ground water in Allegheny County, as tabulated in this report, exceeds 68 million gallons daily in the summer. Industries in the Allegheny Valley (including downtown Pittsburgh) utilize about 43 million gallons. Those in the Ohio Valley utilize 22 million gallons. An additional 3 million gallons daily is pumped in the Monongahela Valley and in the smaller tributary valleys of the county. Plate

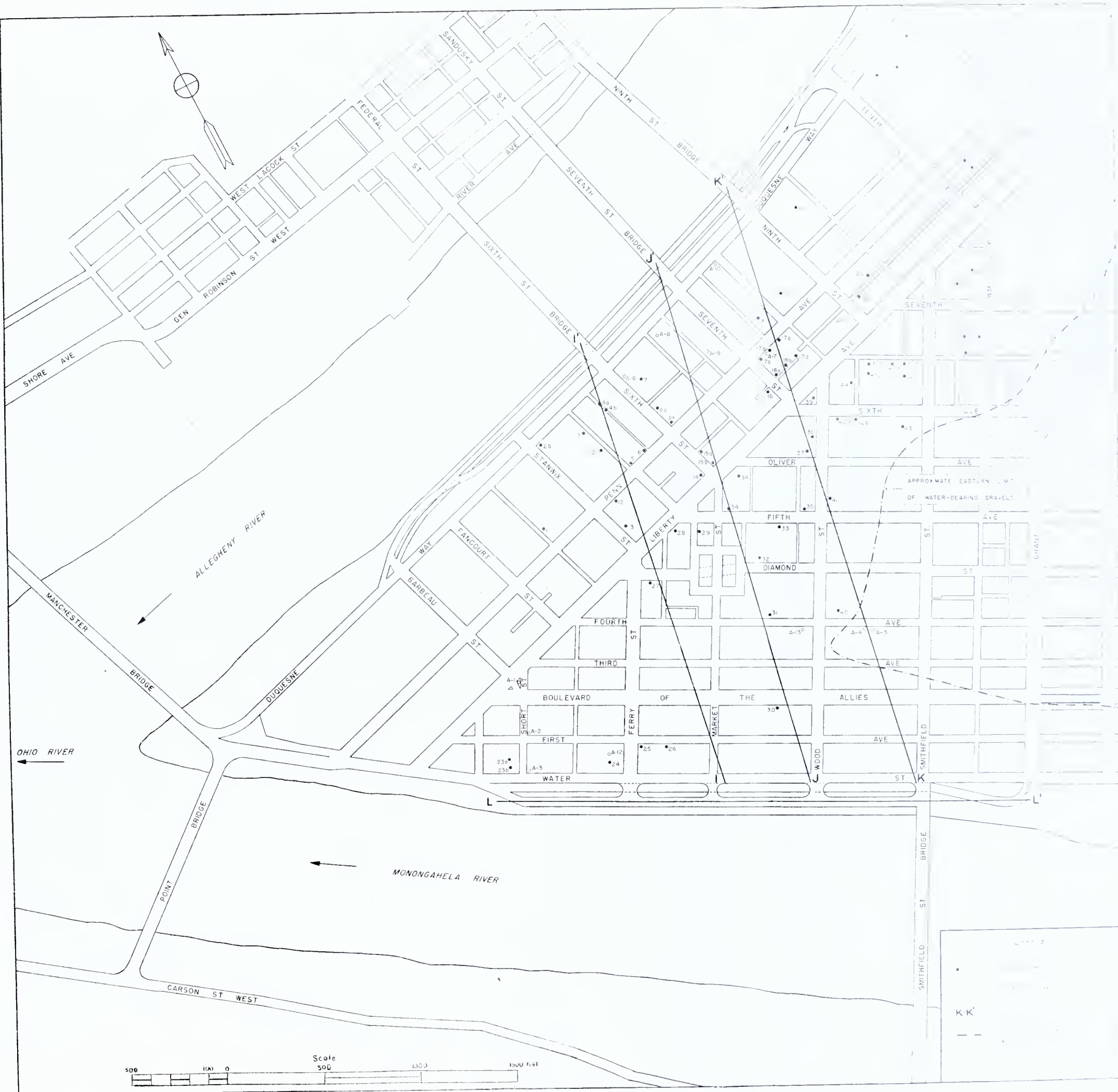


Plate 5. Map of Triangle area, Pittsburgh, showing location of operating and observation wells, geologic cross sections, and the approximate eastern limit of water-bearing gravels

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4 (in pocket) shows the location of all municipal and industrial wells listed in this report, except for the Triangle district of downtown Pittsburgh. Plate 5 is a map of the Triangle district showing the location of wells.

In the Triangle area of downtown Pittsburgh about 12.7 million gallons of ground water is pumped daily. Of this total more than 9 million gallons is used for drinking, washing, condenser cooling, and air conditioning. No accurate information is available on the exact amount of ground water used exclusively for air conditioning, but it is estimated that 60 to 75 percent of the total summer pumpage could be attributed to air-conditioning demand. Six department stores, three theaters, two hotels, and several of the larger office buildings use well water in their air-conditioning systems. The Pennsylvania Railroad pumps 2.5 million gallons daily from three wells for general yard use, and the Union Storage Company, at Water and Short Streets, pumps more than a million gallons a day in the summer. There are 64 wells that operate in the summertime in this heavily pumped, highly congested 0.4-square-mile area. Twenty wells pump less than 100 gpm, 34 pump from 100 to 500 gpm, and 10 pump more than 500 gpm. The most productive single well in the area is owned by the Joseph Horne Company and yields 1,150 gpm. The least productive well in the same area is reported to yield but 7 gpm. However, such factors as size of pump and condition of screens and casings, in all probability, limit the production of many of the older wells. Industrial pumpage in the remainder of the city of Pittsburgh amounts to about 20 million gallons daily. Two of the largest wells in this category are No. 78(a), owned by the Crucible Steel Company, which yields 1,000 gpm, and No. 54, owned by the Federal Cold Storage Company, which yields

900 gpm. In addition, there are four wells of 800-gpm capacity on the North Side and one of 600-gpm capacity at 24th and Smallman Streets. Wells in the city of Pittsburgh classified according to capacity are as follows:

Less than 100 gpm	46 wells
100 to 500 gpm	84 wells
Over 500 gpm	17 wells

Outside the Triangle area, the heaviest concentration of pumping occurs at the upper end of Neville Island. About 7 million gallons daily is pumped by the Municipal Authority of the Borough of West View, and 4.7 million gallons is pumped by the Pittsburgh Coke and Chemical Company. The properties of these two companies are contiguous and the drawdown in the wells of both companies are indicative of the drain on the common aquifer supplying both. In the lower portion of Neville Island an additional 1.6 million gallons a day is pumped, making the total pumpage from the Island approximately 13.3 million gallons daily. Neville Island is roughly 5 miles long and from 1,500 to 1,800 feet wide.

As might be expected, the principal industrial use of ground water in Allegheny County is for cooling in the manufacture of metals and metal products. Forty-seven plants pump a total of more than 15 million gallons daily. More than two-thirds of the wells in these plants yield over 100 gpm each and average about 315 gpm. Office buildings utilize almost 10 million gallons a day, and the majority of these are located in downtown Pittsburgh. Manufacture of chemicals and allied products accounts for the second largest industrial usage of ground water, 15 plants requiring nearly 9 million gallons a day. There are 31 wells in this category, which produce an average of 295 gpm. Two major power and light companies, Duquesne Light Company and West Penn Power Company, pump about 6.8 million gallons of ground

water daily. One well, No. 90b, at the Colfax station of the Duquesne Light Company, a dug well with an inside diameter of 24 feet, is pumped continuously at the rate of 3,280 gpm in summer and 2,870 gpm in winter. This is the most productive well known in the State of Pennsylvania, and Duquesne officials estimate that its total capacity is in excess of 9,000 gpm.

Over 6.2 million gallons a day is pumped by cold-storage and ice-manufacturing plants. Nine such companies own wells which average 370 gpm. The food-products industry requires more than 6 million gallons a day; these wells average about 260 gpm each. The Pennsylvania Railroad, as previously mentioned, pumps 2.5 million gallons daily from three wells and the Pittsburgh & Lake Erie Railroad pumps 3.6 million gallons daily from five wells. The eight wells of the two railroad companies yield an average of about 640 gpm. Seven wells of the meat-packing industries pump 3.2 million gallons daily and yield about 395 gpm each. The manufacture of clay, glass, and stone products utilize 2.3 million gallons of ground water a day; 11 wells owned by these companies average 350 gpm each. Approximately 3.3 million gallons a day of ground water is used by miscellaneous industries in addition to those already described, and it has been estimated that the 116 industrial plants of all types that have already been cataloged require an average of about 500,000 gallons of ground water a day each.

The following is a summary of the industrial ground-water supplies:

ALLEGHENY COUNTY INDUSTRIAL GROUND-WATER SUPPLIES

<u>Type of Industry</u>	<u>No. of Plants</u>	<u>No. of Wells</u>	<u>Pumpage</u> ¹
Metals and metal products	47	81	15.14
Office buildings	44	60	9.93
Chemicals and allied products	15	31	8.96
Power and light plants	5	7	6.81
Cold storage and ice manufacturing	9	13	6.21
Food products	15	28	6.07
Railroads	2	8	6.05
Meat packing	5	7	3.22
Clay, glass, and stone products	8	11	2.30
Miscellaneous products	<u>10</u>	<u>13</u>	<u>3.34</u>
TOTAL	160	259	68.03

¹ Pumpage figures are given in million gallons a day.

Table 1 gives the generalized water requirements for a number of industries:

TABLE 1. Industrial requirements for water¹

<u>Product</u>	<u>Units</u>	<u>Water required, gallons to produce one unit</u>
Airplane engines	1 engine	50,000 - 125,000
Alcohol	Gallon	100
Aluminum	Pound	160
Brewing (beer)	1 barrel	470
Butadiene	Pound	160
Canning	100 cases No. 2 cans	2,500 - 25,000
Cement	Ton	750
Coke	Ton	3,600
Distilling:		
Grain	1,000 bu. grain mashed	600,000
Molasses	1,000 gal., 100-proof	8,400
Cooling water	1,000 gal., 100-proof	120,000

TABLE 1. Industrial requirements for water¹ (continued)

<u>Product</u>	<u>Units</u>	<u>Water required, gallons to produce one unit</u>
Electric power	Kilowatt	80
Gasoline	Gallon	7 - 10
Iron ore (Brown ore)	Ton	1,000
Meat, slaughterhouse and packing	100 hogs killed	550
Milk	1,000 raw pounds	100 - 300
Oil refining	Barrel	770
Paper	Ton	5,000 - 85,000
Rail freight	Ton-mile	0.1
Soap	Ton	500
Steam power	Ton of coal	60,000 - 120,000
Tanning	100 lbs. rawhide	800
Textiles	1,000 lbs. processed	1,000 - 20,000
Rayon	1,000 lbs. produced	135,000 - 160,000
Woolens	1,000 lbs. finished	70,000

¹Data reported in Journal of American Water Works Association, vol. 38, no. 1, Jan. 1946.

Water-Level Fluctuations

The water table is almost everywhere a gently undulating surface which does not remain at a fixed level, but fluctuates slowly up and down as a result of additions to and withdrawals from the body of ground water. In areas where there is little annual variation in precipitation, such as western Pennsylvania, ground-water levels are influenced chiefly, under natural conditions, by seasonal deviations in the rates of evaporation and transpiration. Consequently, the water table is generally lowest in late summer and highest in early spring. Selected measurements of static levels in observation wells throughout this part of the State have indicated this annual cycle.

In restricted areas, such as downtown Pittsburgh, where there is heavy pumpage during the summer, static levels decline to a much lower

elevation than would ordinarily occur in the natural hydrologic cycle. Figures 8 and 9 are hydrographs showing water levels in selected observation wells in downtown Pittsburgh for the period April or May 1946 to March 1948. It will be noted that there are recurring "lows" coinciding with peak temperatures during the period when air-conditioning pumpage is at its maximum. The wells shown in figure 9 show the effects of pumping to a greater degree than those shown in figure 8, which show pronounced effects of changes in river stage. The opinion has been expressed by some of the drilling contractors and building engineers that the maximum practicable pumpage has been reached in the Triangle area of downtown Pittsburgh, and that the addition of more wells would exceed the ability of the gravel aquifer to transmit the necessary water. At several points there is only about 6 feet of saturated gravel between the pumping level and the bedrock floor when all wells in the district are operating. However, analysis of the hydrographs shown in figures 8 and 9 do not indicate an annual downward trend in water level for the 2-year period of record. It has been demonstrated that in some industrial wells in downtown Pittsburgh, the decrease in yield and the lowering of water level under operating conditions have been due to incrustation of the screens. After repairs to correct this condition, yields and pumping levels returned to approximately those reported for those wells soon after their original installation. Although a longer period of record is needed in order to evaluate properly the annual trend of water levels in the gravel stratum underlying downtown Pittsburgh, the available evidence indicates that recharge is in equilibrium with present rates of withdrawal. In cases where the yield and water level in wells continue to decline, the condition of the well itself may be the cause,

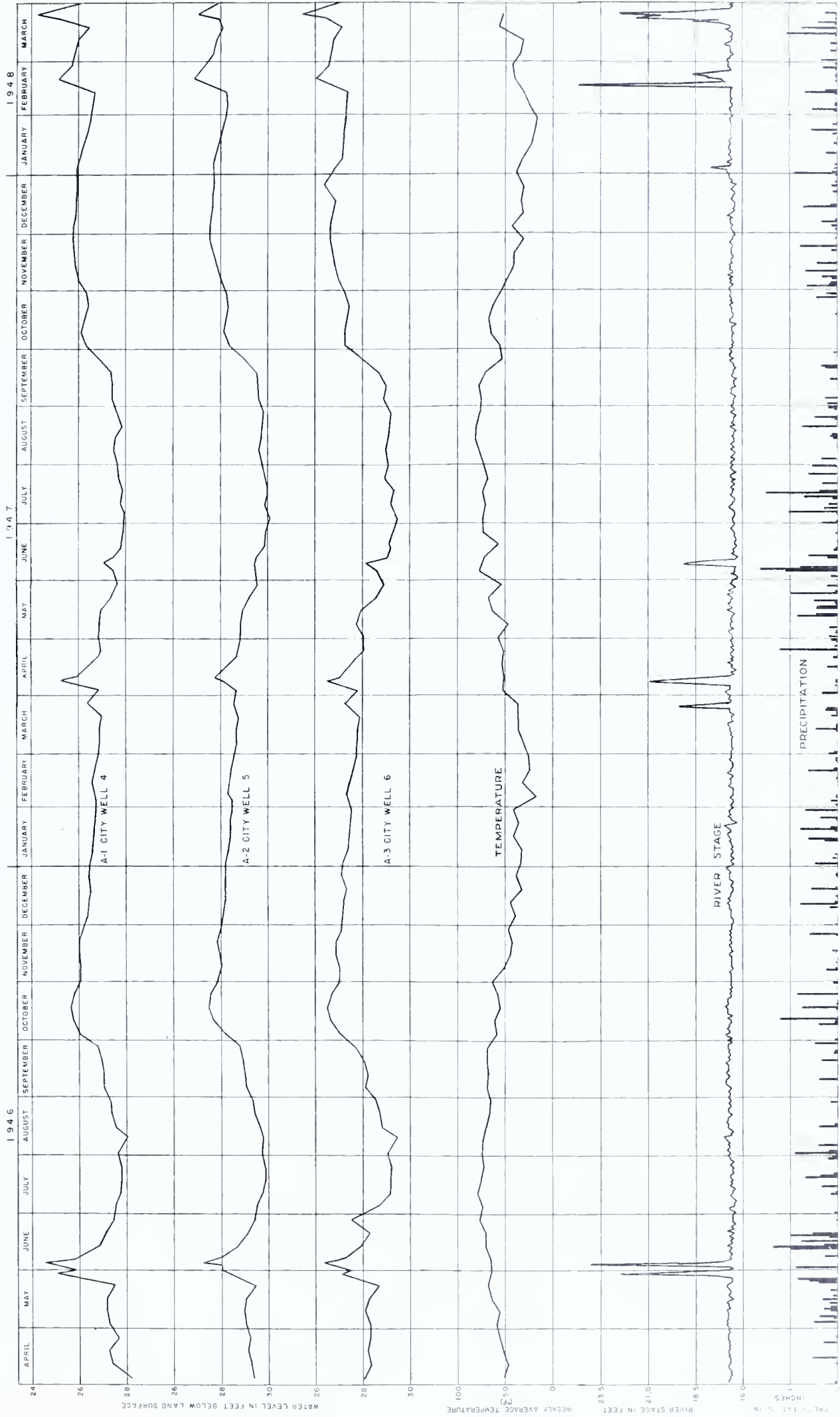


Figure 8 Graphs showing the comparison of water levels in observation wells A-1, A-2, and A-3 with temperature, river stage, and precipitation in the Triangle area, Pittsburgh

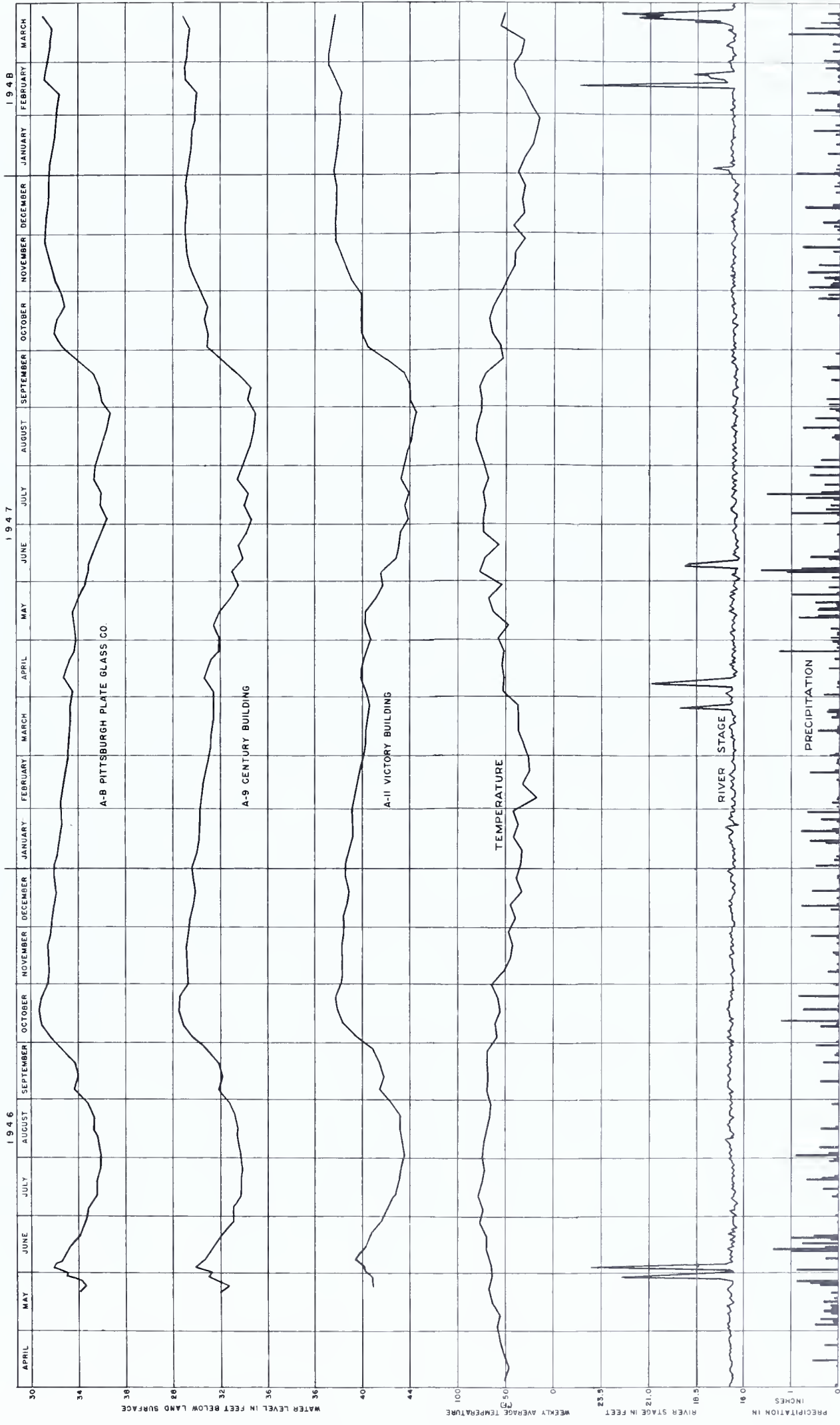


Figure 9. Graphs showing the comparison of water levels in observation wells A-8, A-9, and A-11 with temperature, river stage, and precipitation in the Triangle area, Pittsburgh.

rather than overdraft of the regional supply.

On the other hand, it is not only possible but probable that an increase in the draft on the aquifer by future expansion of air conditioning in downtown Pittsburgh will result in further lowering of water levels and a decrease in yield of the relatively closely spaced wells. Air-conditioning use is seasonal, however, lasting only about 4 months of the year. Access to nearby recharge from the rivers provides an opportunity for effective wintertime recovery of water levels in the gravel stratum, and the seriousness of short periods of overdraft each summer is lessened.

Water levels in observation wells in the Triangle area of Pittsburgh show rapid, and in some cases, large fluctuations. These fluctuations are due primarily to irregular pumping of nearby wells, rather than to regional changes in storage.

Although the quantity of ground water used in Allegheny County exceeds that of any other county in Pennsylvania for which data are available, there is reason to believe that, by proper exploitation, use of this resource can be very greatly increased. The major rivers, particularly the Ohio and Allegheny, serve as a perennial source of recharge to the valley gravels wherever water levels are lowered by pumping to levels below the artificially maintained pool stages, and where geologic conditions permit infiltration of river water into the valley gravels. The Triangle area of downtown Pittsburgh and the south end of Neville Island are areas which illustrate the effectiveness of river recharge in response to local ground-water development. In each case large quantities of ground water are obtained from relatively small areas in which the present rate of withdrawal appear to be balanced by recharge, primarily

by the rivers. There is no indication that the geologic conditions at these two sites are notably more favorable than elsewhere in the valleys of the Ohio and Allegheny Rivers in the county. Examination of well logs and bridge borings, together with a study of water-level and yield data on other areas in the river valleys, suggests that similar developments of ground water can be made elsewhere. It is recognized, however, that the hydrologic properties of the valley sediments and the opportunities for direct river-water infiltration vary from place to place, and well locations should be determined by careful study of the available data, and with full regard for effectiveness of recharge, spacing of wells, and type of well installation. As more data pertaining to subsurface geologic conditions, chemical quality, and temperature characteristics become available, greater progress in the prudent and economical development of the ground-water resource will result.

Chemical Quality of Water

All waters contain impurities due to the dissolving action of water on various rock formations and also to the introduction of trade wastes and sewage. Thus whatever the source, natural waters always contain varying amounts of impurities in solution or suspension. Suspended matter usually can be removed by filtration, but mineral matter in solution generally must be acted upon chemically. Water as it flows down to the sea, either as ground or surface water, is constantly in contact with soluble material, some of which dissolves in the water.

Ground-water analyses of varying degrees of completeness were obtained from 50 companies and municipalities and represent a total of about 90 wells (in some cases analyses of composite samples from two or more wells are

given). These analyses represent the work of many individuals and firms, and it was not possible to ascertain the analyst or procedure followed for each analysis. The following table (table 2) shows only the range in concentration of each constituent reported in waters of this district, and the average concentration.

Table 2. Maximum, minimum, and average chemical concentration of water from about 90 wells in the valley deposits of Allegheny County, Pennsylvania. Analyses made during the period 1930-47.

	Analyses in parts per million			
	Maximum	Minimum	Average	Allegheny River at Springdale
Silica (SiO ₂)	27	2.7	11	4.8
Iron (Fe)	32	0.0	0.86	0.3
Manganese (Mn).	5.2	0.0	1.4	0.4
Calcium (Ca).	445	34	72	20
Magnesium (Mg).	83	2.0	20	4.2
Sodium (Na) and Potassium (K) as sodium.	45	8.1	24	16 (Na only)
Carbonate (CO ₂)	0.0	0.0	0.0	--
Bicarbonate (HCO ₃).	540	56	152	5.0
Sulfate (SO ₄)	1,360	36	133	68
Chloride (Cl)	328	3.5	35	17
Nitrate (NO ₃)	9.6	0.0	0.63	--
Dissolved solids.	1,140	228	429	130
Free CO ₂	90	4.0	27	8.5
Total hardness as CaCO ₃	1,450	103	256	--
Color	20	0	4.75	--
Hydrogen-ion concentration (pH) .	7.8	5.8	7.1	6.0

As a general rule, ground waters of the alluvial deposits in Allegheny County are harder, less turbid, more highly mineralized, and have a higher pH than surface waters of the area. Ordinarily, the ground-water analyses show a pH ranging from 7.0 to 7.4, a hardness ranging from 120 to 360 ppm, and a dissolved-solids content ranging from 250 to 1,200 ppm. By comparison, these concentrations, in addition to dissolved iron and manganese, are gen-

erally much greater than those of the rivers or other surface waters in the area. The surface waters, on the other hand, generally contain higher concentrations of industrial and acid mine wastes and are subject to widespread bacterial contamination.

Many industries require water of a specific quality that must be obtained from natural sources or through special treatment of the available supply. The limits of tolerance for some representative industries are given in table 3, according to Moore (1940, p. 263). The limits are merely an index which enters into an evaluation of an acceptable water for certain industrial processes and for the desired quality of the finished products. Values in the table are intended only as a guide and represent prevailing standards at the time the data were collected. The limits of impurities outlined are those beyond which special corrective treatment is necessary. With modern methods of water treatment, practically all waters can be "tailor-made" for particular use if the cost of such treatment can be justified.

Chemical Composition

The first consideration of a municipal supply is, naturally, the potability of its water. There are, however, many other factors that both municipal and industrial consumers must take into account to determine the suitability of their water supply. An attempt will be made here to summarize some of the more important chemical characteristics of water and their relation to municipal and industrial use.

Table 3. Suggested limits of tolerance for chemical quality of water for industrial use¹
(Limiting values reported in parts per million)

Industry or use	Color	Hardness as CaCO ₃	Iron ³ as Fe ³	Manganese as Mn	Total solids	Alkalinity as CaCO ₃	Other requirements
Baking	10	--	0.2	0.2	--	--	P. ²
Brewing, light beer	--	--	.1	.1	500	75	P. NaCl less than 275 ppm; pH 6.5-7.0.
dark beer	--	--	.1	.1	1,000	150	P. NaCl less than 275 ppm; pH 7.0 or higher.
Canning, legumes	--	26	.2	.2	--	--	P.
general	--	--	.2	.2	--	--	P.
Carbonated beverages	10	250	.3	.2	850	50-100	P. Organic color plus oxygen consumed less than 10 ppm.
Cooling	--	50	.5	.5	--	--	No corrosiveness.
Food, general	--	--	.2	.2	--	--	P.
Ice	5	--	.2	.2	--	--	P. SiO ₂ less than 10 ppm.
Laundrying	--	50	.2	.2	--	--	
Paper and pulp, groundwood	20	180	1.0	.5	--	--	No grit, corrosiveness.
Kraft pulp	15	100	.2	.1	300	--	
Soda & sulfite	10	100	.1	.05	200	--	
High-grade papers	5	50	.1	.05	200	--	
Rayon (Viscose), Pulp production	5	8	.05	.03	100	Total 50; hy- dioxide 8	Al ₂ O ₃ less than 8 ppm; SiO ₂ less than 25 ppm.
Manufacture	--	55	.0	.0	--	--	pH 7.8 to 8.3
Tanning	10-100	50-135	.2	.2	--	Total 135; hy- dioxide 8	
Textiles, general	20	--	.25	.25	--	--	Constant composition.
Dyeing	5-20	--	.25	.25	200	--	

¹Data taken from a progress report by E. W. Moore; New England Water Works Assoc., vol. 54 p. 263, 1940.

² P. indicates that potable water, conforming to U. S. Public Health service standards, is necessary.

³ Limit given applies to iron alone, or to the sum of iron and manganese.

Hydrogen-ion concentration (pH). The symbol pH represents the negative logarithm of the number of moles of ionized hydrogen per liter of water - its hydrogen-ion concentration. It is used to indicate the acidity or alkalinity of the water together with the amount of dissolved oxygen and carbon dioxide, and is important in determining the corrosiveness of a water and the methods necessary for treatment. A water with a pH of 7.0 is said to be neutral. The pH of most natural waters ranges from 6.0 to 8.0. Some alkaline waters have a pH higher than 8.0, and some waters containing free mineral acids have values of less than 4.5.

Dissolved solids. Dissolved solids consist chiefly of the bicarbonate, sulfates, and chlorides of calcium, magnesium, and sodium. Iron, manganese, and silica are also frequently present. There are, of course, many other minerals and compounds which comprise the dissolved-solids content of a water, but they are generally of less importance and occur less frequently and in smaller amounts than those mentioned above. Waters containing more than 500 ppm of dissolved solids are considered generally unsuitable for domestic and many industrial purposes, though much more concentrated waters are used where no better water is available.

Color. The term "color" refers to the appearance of water that is free from suspended solids. The color of water is generally caused by organic matter taken from plants and rocks, although high color may result from industrial wastes and sewage. It is expressed in terms of an arbitrary scale. A color of less than 20 is acceptable for most purposes and is rarely noticeable in the water.

Silica (SiO_2). This constituent is dissolved from almost all rocks and ranges ordinarily from 3 to 50 ppm. When present in relatively high con-

centrations, it forms hard scale in boilers. It is expensive to remove from water.

Iron (Fe). Iron is dissolved from many rocks. When water containing more than a few tenths of 1 ppm of dissolved iron is exposed to air, an insoluble compound results from oxidization of the iron. Iron in water causes stains on fixtures and clothing. Deposition of iron salts or the growth of the so-called iron bacteria may result in clogging of equipment used in many industrial processes.

Calcium (Ca). Calcium is dissolved from nearly all rocks, but especially from limestone, dolomite, and gypsum. Together with magnesium, calcium makes water hard and is one of the principal constituents involved in the formation of scale when the water is heated or evaporated.

Magnesium (Mg). Dolomite rocks are the principal source of magnesium in ground waters. The chloride of magnesium tends to be corrosive, especially where large concentrations are present or where the water is used at high temperature and pressure.

Sodium (Na) and Potassium (K). Sodium and potassium are dissolved from most rocks. The sodium concentration generally is higher than the potassium. They generally are not harmful in ordinary concentrations in natural water, but may cause foaming in boilers if present in excessive quantities. A high percentage of sodium and potassium makes water undesirable for irrigation, as they have an adverse effect upon soil structure.

Carbonate (CO_3) and Bicarbonate (HCO_3). Carbonate and bicarbonate in waters result largely from the presence of carbon dioxide, which enables the water to dissolve compounds of calcium, magnesium, and other bases. Some sodium bicarbonate waters may contain more than 1,000 ppm of bicarbon-

ate. Such large quantities may make the water unsatisfactory for drinking and cooking. Bicarbonate combines with calcium and magnesium to form carbonate or "temporary" hardness, which forms a relatively soft scale.

Sulfate (SO_4). Sulfate results from the solution of such rocks as gypsum and from the oxidization of sulfide in water. Sulfate and chloride combine with calcium and magnesium to form noncarbonate or "permanent" hardness, which forms a hard scale through evaporation of the water.

Chloride (Cl). Chloride in small quantities is dissolved from most rocks. It does not impair the quality of water unless present in amounts of more than about 600 ppm, when it gives the water a salty taste.

Fluoride (F). Much as been written about fluoride in water in journals of the dental profession. Concentrations higher than about 1.5 ppm may cause permanent mottling of the tooth enamel when the water is used during the formation of the permanent teeth, the severity of the mottling increasing with the fluoride concentration. Amounts sufficient to cause mottling of tooth enamel are present in relatively few places - none in the Pittsburgh area so far as is known. It is reported that concentrations of fluoride up to 1 ppm tend to inhibit tooth decay.

Hardness. The hardness of water is primarily a measure of its soap-consuming ability. Calcium and magnesium compounds are the main cause of hardness in water but other constituents such as aluminum, iron, and free acid can cause hardness. Hardness is usually expressed in parts per million as CaCO_3 .

Water having a hardness of less than 50 ppm as CaCO_3 is generally considered soft, and no treatment is required for most uses. Hardness of 50 to 150 ppm is considered moderate, and the water can be used with or with-

out treatment depending on the process for which it is needed. Water having a hardness in excess of 150 ppm is considered hard, and softening is generally desirable.

Temperature

Ground waters below a depth of a few tens of feet normally have a temperature that varies but slightly during the year. The temperature of normal ground water generally is approximately equal to or slightly higher than the mean annual temperature of the air of the locality. According to statistics compiled by the U. S. Weather Bureau for the past 74 years, the mean annual temperature at Pittsburgh is 52.3° F. This figure may vary within a degree or so either way for other parts of Allegheny County, but it is assumed to represent a fair average for the county as a whole. The ground waters in the county lying 30 to 100 feet below the land surface have a temperature of 52° to 54° F. where they are not subject to river-water infiltration or artificial influences. Water wells that penetrate from 100 to 300 feet below the surface of the land generally have temperatures from 3° to 7° F. higher than the mean annual air temperature. At depths greater than 100 feet, the temperature of ground water may be expected to rise 1° F. with every 50 to 100 feet of increasing depth, owing to similar increases in the temperature of the earth's crust.

Temperature is perhaps the most important single physical attribute of ground waters being used in Allegheny County. The use for air conditioning and industrial cooling processes represents more than half the total pumpage from wells in the county.

There are many places in Allegheny County where ground-water temperatures vary more than the usual 2° to 3° F. during the year. Where pumping is heavy

and pumping levels are drawn considerably below the pool stage of the river, the induced infiltration causes temperature fluctuations of as much as 17° F. during the year. In addition to river-water infiltration, there is also one other important condition that affects the temperature of shallow ground water in the major stream valleys. Many industrial units, such as blast and open-hearth furnaces, steam-heating plants, and the like, where located close to well intakes or sources of recharge, have resulted in ground-water temperature as much as 42° F. higher than the normally expected temperature. The most striking example is the water supply of the City of Duquesne, where ground-water temperatures of 95° F. have been reported in an area in which the mean annual air temperature is 53° F. Adjoining the water works is a large plant of the Carnegie-Illinois Steel Corporation. In other areas where similar conditions exist, ground-water temperatures in the middle seventies have been recorded.

SUMMARY OF WELLS

A summary of wells in the valley alluvium of Allegheny County is given below. The wells are listed in order, beginning at Pittsburgh and following the south side of the Allegheny River valley to the county line, then down the Allegheny and Ohio Valleys on the north side to the county line and back to Pittsburgh along the opposite side. The numbering of wells continues southward from Pittsburgh along the Monongahela Valley on the west side and follows the east side back to Pittsburgh. Well numbers in the table correspond to those given to wells shown on the map of Allegheny County, plate 4 (in pocket).

Elevations for wells in the following summary which are not recorded to tenths or hundredths of a foot, were computed from Geological Survey or Army Engineer topographic maps. Depth of wells and water-level data are

given to the nearest foot for all wells reported by drillers or well owners. Measurements made by the authors during field investigation and other tape measurements considered reliable are indicated by decimal-point figures. All wells listed obtain water from Pleistocene (Wisconsin) and Recent river valley alluvium.

Summary of Wells

No. on pls.4 and 5	Owner or Tenant	Thick- ness of aquifer (feet)	Year com- pleted	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below land surface (feet)	Date of measure- ment	Yield of well (gpm.)	Date of measure- ment	Use of water Data available
1	Mayfair Hotel	53	1946	730	67.0	10	29.0	1946	350	1946	G,g,P
2a	Joseph Horne Co.		1935	730	67.5	18	26.0	1935	500	1946	G
2b	do.		1937	730	69.5	18	27.0	1937	1,150	1937	A,p
3	Allegheny Steam Heating Co.		1913	730	77.0	12	29.2	1928	40	1946	C
4a	Manufacturers Building		1908	730	70	12	34	1946	450	1946	G
4b	do.		1908	730	70	12	34	1946	450	1946	G
5	Walgreen Drug Co.		1937	730	78.0	6	30.0	1937	60	1946	A
6	Stouffers Restaurant	45	1933	730	79.5	10	30	1933	150	1947	G,g
7	J. P. Harris Theater		1935	732.5	68.2	10	35.75	1947	250	1947	A,p
8a	Roosevelt Hotel		1924	730	68	6	38	1943	450	1946	A
8b	do.		1943	730	61	8	38	1943	800	1946	G
9	M. Bonn Co.		1900	730	75	4	34	1946	50	1946	G
10	Arbuthnot-Stephenson Co.		1910	730	50	4	34	1946	10	1946	D
11	Duff & Sons, Inc.		1916	730	62	10	34.8	1947	200	1946	G
12	Jenkins Arcade		1911	730	83	12,8	30	1936	200	1946	G
13	Empire Building		1900	730	82.0	8	32.0	1900	40	1946	G
14	Rosenbaum Co.		1914	732	67	12	32	1946	200	1946	G
15a	F. W. Woolworth Co.		1916	732	69	8	32	1946	100	1946	G
15b	do.		1936	732	60	12	32	1946	350	1946	A
16	Keenan Building		1912	731	90	6	30	1946	150	1947	G
17a	Stanley Theater		1926	735	111.0	12	35.0	1947	150	1947	A
17b	do.		1926	735	108	12	35	1947	150	1947	A
17c	do.		1926	735	108	12	35	1947	150	1947	A
17d	do.		1926	735	108	12	35	1947	150	1947	A
18a	Clark Building		1926	735	108	12	35	1947	150	1946	G
18b	do.		1926	735	108	12	35	1947	100	1946	G
19	Renshaw Building		1907	735.5	75	6	35	1946	150	1946	G

No. on pls 4 and 5	Owner or Tenant	Thick- ness of aquifer (feet)	Year com- pleted	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below land surface (feet)	Date of measure- ment	Yield of well (gpm.)	Date of measure- ment	Use of water Data available
20	May-Stern Co.		1940	732	71	8	36	1940	150	1947	A
21a	Ft. Pitt Hotel		1915	737	80	10	40	1943	750	1947	G
21b	do.		1941	737	72.25	12	43.0	1943	750	1947	G
22a	Pennsylvania Railroad		1937	741	80.0	20,10	42.0	1942	900	1942	I,p
22b	do.		1939	746	85.0	20,10	47.0	1942	900	1942	I,p
22c	do.		1939	746	86.0	20,10	46.0	1942	1,000	1942	I,p
23a	Union Storage Co.		1912	730	61.3	14,8	27	1947	500	1947	C
23b	do.	48	1941	730	70	14,8	25.0	1941	700	1947	C,g,p
24	Pittsburgh & West Virginia Railroad		1908	736	57	10	25	1946	300	1946	D,C
25	Tranter Manufacturing Co.		1908	736	80	4	33	1946	10	1946	G
26	Pittsburgh Trolley & Forge Co.		1916	740	78	8	33	1946	20	1946	G
27	McCann & Co.		1935	736	68	20	33.0	1935	275	1946	C
28	Pittsburgh Bank Building		1926	730	60	10	33	1946	50	1946	G
29	H. A. Speer Dairy Co.		1935	738	75	6	35	1946	50	1947	G
30	Weaver-Costello Candy Co.		1902	738	62	8	34	1946	50	1946	C
31	Benedum-Trees Building		1906	740	68	10	38	1946	125	1946	G
32	G. C. Murphy Co.		1931	740	69	12	40	1946	330	1946	G
33	Donahue Co.		1923	738	66	14	40	1946	250	1946	G
34	Hacke Building		1946	738	65	8	40	1946	100	1946	A
35	Peoples First National Bank Building		1900	738	66.0	12	39.0	1947	80	1947	G
36	Meyer-Jonasson Co.		1922	734	63	10	31	1946	250	1946	G
37	Hardy & Hayes		1910	735	75	12	38	1946	50	1946	G
38	Hughes & Hatcher	56	1946	734	68.0	10	45.0	1946	350	1946	A,g,p
39	Max Azen, Inc.		1946	734	63.2	10	35.5	1946	300	1946	G,p
40	Peoples First National Bank and Trust Co.			736	96	4	40	1946	30	1946	G
41	Farmers Bank Building		1904	736	61.2	12,10	44.5	1947	200	1947	G

Summary of Wells

No. on pls. 4 and 5	Owner or Tenant	Thick- ness of aquifer (feet)	Year com- pleted	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below land surface (feet)	Date of measure- ment	Yield of well (gpm.)	Date of measure- ment	Use of water Data available
42a	Spear & Co.		1924	736	71	8	38	1946	200	1946	D
42b	do.		1940	736	80.3	12	38	1946	1,000	1946	A
43	Oliver Building		1909	740	72.0	12	44.0	1948	215	1946	G,a
44	Eastman Kodak		1915	736	80	4	35	1946	5-10	1946	I
45a	Duquesne Club		1910	738	63.0	12	40	1946	125	1946	G
45b	do.		1932	738	70.5	12	40	1946	125	1946	G
46a	Gimbel's		1916	740	90	10	60	1946	250	1947	G
46b	do.		1910	738	90	10	60	1946	125	1947	G
46c	do.		1936	740	90	18	60	1946	650	1947	A
47a	Bell Telephone Co.		1906	745	80.9	12	47.5	1944	40	1946	D,a
47b	do.		1941	745	78.0	18	47	1944	100	1946	C,a
47c	do.		1942	745	78.0	12	47	1944	100	1946	G
48	Chamber of Commerce		1916	740	67.8	12,6	45.5	1946	90	1946	G
49	Senator Theater	67	1947	742	71.4	12	49.8	1947	200	1947	A,g,p
50	Christion & Co.		1930	740	90	8	40	1947	150	1935	C
51	Byrnes & Kiefer		1947	740	74.0	10	44.0	1947	65	1947	G
52	Wilson & Co.		1936	736	70	12	38	1946	190	1946	G
53	Hardie Bros. Co.		1923	735	89	12	42	1947	500	1947	G
54	Federal Cold Storage Co.	34	1930	733	66.0	12	30.0	1930	900	1947	C,g,p
55	Kroger Grocery		1934	728	56.2	8	26	1934	300	1946	G
56	Munroe Boiler Co.		1930	735	70	6	35	1946	30	1947	D,C
57a	Otto Milk Co.		1938	736	62	12	35	1946	400	1947	C
57b	do.		1940	736	62	12	35	1946	300	1947	C
57c	do.		1946	736	62	12	35	1946	600	1947	C
58a	Armstrong Cork Co.		1907	730	60	6	30	1943	300	1946	C
58b	do.		1943	730	60	6	30	1943	300	1946	C
59a	Fairmont Creamery		1923	737	65	12	38	1946	500	1947	C
59b	do.		1932	737	65	12	38	1946	500	1947	C

No. on pls.4 and 5	Owner or Tenant	Thick- ness of aquifer completed (feet)	Year of com- pleted	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below land surface (feet)	Date of meas- ure- ment	Yield of well (gpm.)	Date of meas- ure- ment	Use of water Data available
60	Simonds Gear & Manufac- turing Co.		1912	742	70	4	30	1912	40	1946	G
61	Kerotest Manufacturing Co.		1912	743	150	5	60	1946	100	1947	C
62	Seaboard Glass Bottle Co.		1901	733	90	6	26	1901	55	1946	G
63	Reliance Steel Casting Co.	31	1946	732	61.0	10	29.8	1946	200	1946	C,g,p
64	Fabiricon Products		1932	730	66.5	8	23	1932	40	1946	C
65	Iron City Tool Works		1904	735	83	8	30	1942	20	1946	G
66a	Duquesne Smelting		1940	730	63	10	30	1940	300	1946	C
66b	do.		1942	730	63	10	30	1942	300	1946	C
67	Little America Frozen Foods Co.		1924	748	208	8	50	1947	140	1947	C
68	Pittsburgh Rolls, Div. of Blaw-Knox	48	1938	734	60.0	12	22.0	1938	150	1947	D,C,g,p
69	Consolidated Ice		1942	734	58.5	20,10	24.0	1942	500	1946	C,p
70	Pittsburgh Pipng & Equip- ment Co.		1900	732	60	6	24	1947	60	1947	C,a
71	A. & P. Tea Co.	62	1944	734	70.0	12	21.0	1944	220	1946	C,g
72	Heppenstall Co.		1917	734	50	6	26	1946	150	1946	D
73	McConway-Torley Inc.	59	1937	732	71.0	6	22.0	1937	65	1937	D,g,p
74	Crushed Steel Co.		1940	742	75	8	28	1940	70	1946	G
75	Pittsburgh Commercial Heat Treating Co.		1943	740	65	6	30	1943	50	1946	I
76	H. K. Porter Co.		1900	742	80	4	30	1940	150	1946	D
77	American Bridge Co.	47	1941	745	61.0	12	32.0	1938	200	1938	I,C,g,p
78a	Crucible Steel Co. (Spring Works)		1912	736	57.0	192	30.3	1944	1,000	1944	C
78b	do.		1912	736	90	4	32	1944	10	1944	D
79a	Westinghouse Nutall Works		1934	741	86.0	10	32	1945	350	1947	G
79b	do.		1945	741	62.0	12	32	1945	500	1947	G
80a	Waverly Oil Works		1920	740	70	4	28	1941	100	1947	C
80b	do.	44	1941	735	72.0	12	26.5	1941	500	1941	C,g,p

Summary of Wells

No. on pls.4 and 5	Owner or Tenant	Thick- ness of aquifer (feet)	Year com- pleted	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below land surface (feet)	Date of measure- ment	Yield of well (gpm.)	Date of measure- ment	Use of water Data available 1/
80c	Waverly Oil Works	40	1941	735	72.0	12	27.0	1941	500	1941	C,g,p
81	American Steel Foundries	41	1944	745	64.75	12,8	20.0	1944	200	1944	C,g,a,p
82	Linde Air Products Co.		1928	745	120	8	22	1945	50	1946	C
83a	Edgewater Steel Co.	52	1937	743	73.0	36,18	21.0	1937	600	1946	I,C,g,p
83b	do.	61	1937	753	81.0	36,18	32.0	1937	600	1946	I,C,g,p
83c	do.	56	1939	753	82.0	16	34.0	1939	700	1946	I,C,g,p
83d	do.	57	1942	753	82.0	36,18	34.0	1941	700	1946	I,C,g,a,p
84	U. S. Gypsum Co.	30	1939	730	49.0	24,16	29.5	1939	620	1946	I,C,g,p
85a	Aluminum Co. of America	30	1939	760	38.0	38,18	18.0	1944	300	1946	I,C,g,p
85b	do.	58	1939	755	62.5	24,12	18.3	1944	400	1946	G,g,p
86a	Tarentum Products	46	1946		70.5	24,18	16.0	1946	1,000	1946	G,g,p
86b	do.	51	1946		71.5	24,18	19.17	1946	960	1946	C,g,p
87a	Pittsburgh Plate Glass Co.	46	1941	755	70.0	44,18	27.0	1941	840	1941	A,C,g,p
87b	do.	58	1944	755	72.5	36,18	30.0	1944	700	1944	A,C,g,p
87c	do.	54	1947	755	73.0	36,18	20.0	1947	1,175	1947	A,C,g,p
88	West Penn Power Co.		1927	756	68	180	50	1947	1,200	1947	C
89a	Springdale Borough		1921	755	64.0	10	21	1921	450	1947	P
89b	do.	64	1925	753	66.5	12	30.0	1925	260	1947	P,g
89c	do.	32	1945	755	60.0	12	19.0	1945	450	1947	P,g,a
90a	Duquesne Light Co.		1919	754	53.5	60x102	46.5	1926	850	1931	C,a
90b	do.		1926	754	61.0	288	17.9	1941	8,880	1947	C,a,p
91a	Cheswick Borough		1925	750	60.0	10	30	1946	100	1946	P
91b	do.		1945	750	60.0	12	30	1946	200	1946	P
92	Harmar Water Co.	43	1945	740	66.0	12	31.0	1945	200	1946	P,g,a,p
93a	Cemline Corporation		1936	740	80	4	15	1946	9	1946	I
93b	do.		1940	740	80	8	15	1946	9	1946	I
93c	do.		1946	740	80	8	15	1946	9	1946	I
94	Consumer's Mining Co.		1919	722	52	12	20	1947	500	1947	D,G,p

No. on pls. 4 and 5

No. on pls. 4 and 5	Owner or Tenant	Thick-ness of aquifer (feet)	Year completed	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below surface (feet)	Date of measurement		Yield of well (gpm.)	Date of measurement	Use of water Data available
95	Oakmont Water Authority		1918	730	70	8	20	1947		390	1947	P,a
96	Allegheny County Workhouse		1927	729.4	58	8	15	1927		300	1927	G,a
97	J. F. Casey Co.		1925	740	85	5	30	1947		50	1947	G,D
98a	Aspinwall Borough	50	1938	735	62.75	18,12	18.0	1938		460	1938	P,g,p,a
98b	do.	52	1944	735	65.0	18,12	17.5	1944		460	1944	P,g,f
99a-d	Sharpsburg Borough		1919	717	47	6						
99e-i	do.		1931	730	60	12				()	()	P,a
99j-m	do.		1940	736	66	12				(1,800)	(1947)	P,a
100a	Ft. Pitt Brewing Co.		1934	718.5	48.0	26	28.0	1934		300	1934	I
100b	do.	37	1941	732	60.0	24,16	21.0	1942		425	1946	I,g,p
100c	do.	37	1945	732	60.0	24,18	19.5	1946		450	1946	I,g,a,p
101a	Etna Borough		1938	735	79.0	18	25	1939		350		C
101b	do.		1938	722.7	56.5	12	12.0	1939		549	1938	P,a,p
101c	do.		1938	729.7	64.0	12	18.0	1939		982	1938	P,a,p
102a	Shaler Township Water Co.	47	1939	730	72.0	12	20	1947		600	1939	P,g,a,p
102b	do.		1939	730	74.0	12	20	1947		500	1939	P,p
102c	do.	38	1947	720	60.0	13	9.33	1947		557	1947	P,g,p
103a	Pittsburgh Melting Co.		1910	730	80	6	27	1946		200	1946	G
103b	do.		1946	730	57	12	27	1946		500	1946	G
104a	Pittsburgh Provision & Packing Co.		1912	732	50	192	22	1937		800	1946	D
104b	do.	43	1937	732	68.0	24,16	19.75	1937		1,084	1937	C,g,p
104c	do.	40	1945	732	71.0	24,18	25.0	1945		800	1945	D,g,p
105	Standard Ice Co.		1925	707	40	12				350	1946	C
106	McGraw Wool Co.		1934	707	50	12				900	1947	I
107	Pittsburgh Wool Co.		1920	730	80	10	25	1946		15	1946	I
108a	H. J. Heinz Co.	36	1923	725	57.5	38,24	36	1931		400	1947	C,g,a
108b	do.	11	1923	725	56.0	24	36	1931		150	1947	C,g,a
108c	do.		1931	725	59	12	36.0	1931		150	1947	C,a
108d	do.		1931	730	76	10	34.5	1931		30	1947	C
108e	do.		1931	730	76	8	34.5	1931		100	1947	C

Summary of Wells

No. on pls.4 and 5	Owner or Tenant	Thick- ness of aquifer (feet)	Year com- pleted	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below land measure- ment (feet)	Date of measure- ment	Yield of well (gpm.)	Date	Use of water Data available
108f	H. J. Heinz Co.		1931	730	76	8	34.5	1931	30	1947	C
108g	do.		1946	725	58	12	36	1931	800	1947	C,a,p
109	Armour & Co.		1928	732	60	8	28.75	1943	20	1943	C
110	Swift & Co.		1930	732	56	12	28	1943	120	1946	C
111	Pannier Brothers		1906	733	40	6	30	1943	10	1947	D
112	Beverly Farms Milk Co.		1941	725	62	10	25	1946	50	1947	C
113	National Casket Co.		1918	724	68	8	22	1946	200	1947	G
114a	United Laundries		1906	740	70	4	25	1946	40	1947	D
114b	do.		1906	740	70	4	25	1946	40	1947	D
115	Rosedale Foundry		1910	728	50	6	24	1910	70	1947	D,C
116	Fro-Del Ice Cream		1935	732	50	8	30	1935	125	1947	C
117	Kelly Brothers Ice Co.		1936	735	104	8	22	1936	5	1947	C
118	Duff-Norton Manufacturing Co.	24	1947	725	45	10	20.5	1947	300	1947	G,g,a,p
119a	Pittsburgh Screw & Bolt Co.		1942	725	48.5	6	23	1942	300	1947	A,C
119b	do.		1945	725	49.5	6	23	1945	200	1947	A,C
120a	Western Penitentiary		1932	725.6	63	18	22.0	1945	330	1947	G
120b	do.	37	1932	721.54	46	18	17.6	1946	130	1947	G,g,a
121a	Liquid Carbonic Co.		1920	725	45	10	22	1936			C
121b	do.	40	1936	725	46.5	12	25	1936	30	1947	C,g,p
121c	do.	42	1936	725	47.3	12	25	1936	60	1947	C,g,p
121d	do.		1936	725	47.3	12	25	1936	45	1947	C,p
122	Sterling Varnish Co.	22	1947	715	52	12	20.0	1947	125	1947	G,g
123a	Sewickley Ice Co.		1900	730	65	12,6	30	1947	150	1947	C,a
123b	do.		1900	730	65	8,5	30	1947	50	1947	C
123c	do.		1900	730	65	8,5	30	1947	75	1947	C
124	Edgeworth Water Co.		1926	685	40	12		1947	1,100	1947	P
125a	Bethlehem Steel	34	1939	700	59	24,16	29.05	1939	550	1947	G,g,p
125b	do.	33	1939	700	59.5	24,16	29.75	1939	450	1947	G,g,p

No. on pls 4 and 5	Owner or Tenant	Thick- ness of aquifer pleated (feet)	Year com- pleted	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below land surface (feet)	Date of measure- ment	Yield of well (gpm.)	Date of measure- ment	Use of water Data available
126a	Russell, Burdsall & Ward		1927	700	70	10	18	1946	150	1946	I
126b	do.		1930	700	68	10	20	1946	200	1946	G
127	Continental Forge & Machine Co.		1924	700	50	8	25	1946	75	1946	D, I, a
128	Republic Oil Co.			715	60	6	25	1946	300	1946	I
129	National Cylinder Gas Co.		1928	715	64.5	12	20	1946	150	1946	C
130a	Plant #2, Standard Steel Spring	46	1942	715	53	12	17.0	1942	700	1942	C, g, a, p
130b	do.	41	1942	715	50.5	12	12.0	1942	575	1942	C, g, p
131a	Pittsburgh Forgings Co.	18.25	1941	715	62.25	36, 18	29.0	1941	1,000	1941	G, g, a, p
131b	do.	36	1942	715	63	36, 18	32.0	1942	875	1942	G, g, a, p
132a	Canfield Oil Co.		1923	715	65	12	30	1941	500		C
132b	do.	37	1939	715	61	36, 20	28.0	1939	1,500	1939	C, g, p
132c	do.	37	1941	715	61	20	28.0	1941	675	1941	C, g, p
133	Plant #1, Standard Steel Spring	43	1944	715	60	12	35.0	1944	300	1946	C, g
134	Coraopolis Ice Co.		1935	718	72	12	33	1946	700	1946	C, a, p
135a	Coraopolis Borough		1929	685	38	10			600		P, a
135b	do.		1936	715	67	48, 18	35	1936	527	1936	P, p
135c	do.	34	1936	715	62	48, 18	35	1936	583	1936	P, g, p
135d	do.		1936	715	67	48, 18	35	1936	542	1936	P, a, p
136	Codo Manufacturing Co.		1939	718	65	8	33.0	1939	15	1946	C
137	Consolidated Lamp & Glass Co.		1912	718	80	4	30	1939	75	1946	C, I
138	Pittsburgh Screw & Bolt Corp.		1939	718.89	50	8	20	1946	500	1946	C, a
139a	Dravo Corporation		1918	726	65	6	35.0	1942	50	1943	D, A, a, p
139b	do.		1940	726	66	12	30.0	1940	350	1940	A, D, a, p
139c	do.		1943	725	65	48	33.0	1944	800	1943	I, F, a, p

Summary of Wells

No. on pls. 4 and 5	Owner or Tenant	Thick- ness of aquifer (feet)	Year com- pleted	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below land surface (feet)	Date of measure- ment	Yield of well (gpm.)	Date of measure- ment	Use of water Data available
140	Lee C. Moore Co.			722	60	8	35	1946	70	1947	C, I
141	Concrete Products Co.		1910	720	60	10	30	1946	150	1947	I, F
142	Air Reduction Sales Co.		1922	720	60	10	30	1946	45	1947	C
143	Marcus-Ruth-Jerome			720	70	6	30	1946	75	1947	C
144a	Neville Company		1941	717.8	58	12	19.25	1941	500	1946	C
144b	do.		1941	717.8	58	12	20	1941	250	1946	C
145	Neville Island Glass Co.	45	1946	720	67	12	22.0	1946	250	1947	C, g, p
146a	Pittsburgh Coke & Chemical Co.		1920	733.92	68	8	32	1946	200	1947	D, I
146b	do.		1931	734.40	69	12	32.25	1931	600	1947	D, I, a
146c	do.		1944	726	61.8	18	22.42	1944	700	1947	C, p
146d	do.		1942	732.50	69	16	34.0	1942	900	1947	C, a, p
146e	do.		1945	728.50	69	18	23.0	1944	600	1947	C, a, p
146f	do.		1945	739.50	78.13	18	36.5	1945	250	1947	D, I, a, p
146g	do.		1934	726	68	12	25	1946	25	1947	C
147a	West View Municipal Authority			700	40	12			2,100	1947	P
147b	do.			700	40	12, 8, 6, 11			800	1947	P
147c	do.		1938	728.75	58	48, 16	22.05	1938	1,400	1947	P, p
147d	do.	48	1943	722.27	60	12	38.0	1943	375	1947	P, g, a, p
147e	do.	50	1943	734.66	74.5	18	38.0	1943	833	1947	P, g, a, p
147f	do.		1947	725.71	65	156	43.3	1947	1,400	1947	P, p
148a	National Cylinder Gas Co.		1930	730	90	10	30	1946	150	1947	C, a
148b	do.		1937	730	90	10	30	1946	50	1947	C
149a	Pressed Steel Car Co.		1928	730	68	8	28	1944	500	1947	I, D, a
149b	do.		1944	730	68	36, 16	28.0	1944	500	1947	I, D, g, a, p
150a	Carnegie-Illinois Steel Co.	43	1905	729	60.3	12	26	1941	560	1941	I, a
150b	do.		1941	729	67	12	25.5	1941	500	1946	I, p
150c	do.		1942	729	69	12	26.4	1942	500	1946	I, p
151a	West View Municipal Authority		1941	726	58	12	17.2	1947	535	1941	P, p

No. on pls.4 and 5	Owner or Tenant	Thick- ness of aquifer completed (feet)	Year com- pleted	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below land surface (feet)	Date of measure- ment	Yield of well (gpm.)	Date of measure- ment	Use of water Data available 1/
151b	West View Municipal Authority		1941	726	59	12	16.98	1947	675	1941	P,a,p
152a	Lockhart Iron & Steel Corp.		1916	722	62.5	12,8	28	1946	150	1947	C
152b	do.		1916	722	63	12,8	28	1946	150	1947	D,C
152c	do.		1919	722	64	12,8	28	1946	150	1947	C
152d	do.		1917	722	65	12	28	1946	100	1947	C
152e	do.		1917	722	65	12	28	1946	100	1947	C
152f	do.		1917	722	65	12	28	1946	100	1947	C
152g	do.		1917	722	65	12	28	1946	100	1947	C
153a	Pittsburgh & Lake Erie Railroad		1913	722	62	18	30	1946	600	1947	I,a
153b	do.		1913	722	62	18	30	1946	550	1947	I
153c	do.		1929	722	62	18	30	1946	450	1947	I
153d	do.		1938	722	62	18	30	1946	850	1947	I
153e	do.	45	1946	727	67	18	30.5	1944	1,000	1947	I,g,p
154a	Duquesne Light Co.	43	1930	730.5	66	24	25.0	1930	500	1946	C,g,a
154b	do.		1939	740.0	80	18	30.0	1939	240	1946	C,a
155a	North Pole Ice Co.		1928	740	71	20	22	1946	750	1947	I,a,p
155b	do.		1939	740	71	20	22	1946	750	1947	I,p
156	W. W. Lawrence Co.		1902	735	80	10	27	1946	50	1947	C,I
157	East Carson Packing Co.			732	54	10	28.5	1946	50	1946	C,p
158a	City of Duquesne Water Co.		1924	750	130	24,20	25	1946	250	1947	P
158b	do.		1938	735	82	18	25	1946	200	1947	P
158c	do.		1941	750	118	20	25	1946	200	1947	P
158d	do.		1941	725	64	20	14.0	1941	200	1947	P
158e	do.		1943	735	87	18	25	1946	250	1947	P
158f	do.	40	1947	725.6	52.5	12	13.5	1947	100	1947	P,g,p
158g	do.	41	1947	727.6	54	12	12.0	1947	135	1947	P,g,a,p
159a	Pennsylvania Industrial Chemical Corp.	28	1943	750	73	10	38.0	1943	300	1943	C,g,a
159b	do.	25	1944	750	71	12	43.0	1944	280	1944	C,g,a,p

No. on pls. 4 and 5	Owner or Tenant	Thick- ness of aquifer (feet)	Year com- pleted	Altitude of land surface (feet)	Depth of well (feet)	Diameter of well (inches)	Water level below land surface (feet)	Date of measure- ment	Yield of well (gpm.)	Date of measure- ment	Use of water Data available
160a	Mississippi Glass Co.	45.5	1936	750	75.5	12	35	1946	250	1946	G, g, i
160b	do.		1936	750	75	12	35	1946	250	1946	G, a
161	Liggett Spring & Axle Co.		1926	760	73	5	25	1946	5	1946	D
162a	Combustion Engineering Co.		1947	750	54	10	34	1947	100	1946	I
162b	do.		1917	750	76	4	30	1946	10	1946	D
163a	Pittsburgh Steel Foundry Corp.		1942	750	80	20	25	1946	150	1946	C, G
163b	do.		1942	750	80	20	25	1946	100	1946	C, G
163c	do.		1942	750	80	20	25	1946	100	1946	C, G
163d	do.		1921	750	80	18	25	1946	250	1946	C, G
163e	do.		1921	750	80	18	25	1946	250	1946	C, G
164a	Firth-Sterling Steel Co.		1916	735	90	12	25	1946	75	1947	I, G
164b	do.		1920	735	90	10	25	1946	75	1947	I, C
165	Diamond Ice Co.		1921	745	80	6	30	1947	80	1947	C
166	American Steel & Wire Co.		1901	740	80	8	25	1945	100	1947	C, D
167a	Westinghouse Electric Corp.		1933	760	34	60	16	1947	200	1947	C
167b	do.		1937	760	32	96x96	16	1947	75	1947	C
167c	do.		1937	760	32	96x96	16	1947	75	1947	C
167d	do.		1941	760	184	8	16	1947	150	1947	C
168	Boston-McKeesport Brick Co.			740	40	6	25	1947	5	1947	I
169a	Federal Enameling & Stamping Co.		1946	740	68	12	17	1947	240	1947	I
169b	do.		1946	740	68	12	17	1947	240	1947	I
170	Columbia Steel & Shafting Co.		1920	760	46	96x96	10.58	1946	45	1946	I, a
171a	Duquesne Brewing Co.		1907	760	100	5	20	1947	15	1947	C
171b	do.		1907	760	100	5	20	1947	15	1947	C
171c	do.		1907	760	100	5	20	1947	15	1947	C
172	Max Solomon Co.		1917	780	23	72	20	1947	5	1947	I, D
173a	Woodville State Hospital		1919	800	95	8	30	1946	50	1947	I
173b	do.		1919	800	95	8	30	1946	50	1947	I, a

L/ Use of water: A, air conditioning; C, cooling; D, domestic; I, industrial; P, public supply; G, general;
F, fire protection. Data Available: a, analysis; g, log; p, pumping test.

Records of wells in the valley alluvium of Allegheny County

1, Mayfair Hotel, 423 Penn Ave., Pittsburgh. Drilled in 1946 by Robert Keaton. Usage: General.

Surface elevation: 730 feet. Top of casing 9 feet below land surface.
Diameter of casing: 10 inches. 10 feet of screen at bottom.
Depth: 67.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Basement.		9
Concrete.	5	14
Brown clay, sand and gravel	24	38
Light sand and clay	2	40
Coarse sand and gravel.	14	54
Loose gravel boulders	13	67

Installation: Turbine pump; capacity, 350 gpm.; motor-20-hp.

Pumping test
Date: 1946. Duration: 24 hours.
 Static level: 29 feet.
 Drawdown: 5 feet.
 Yield: 350 gpm.
 Specific capacity: 70.

Production: Not in use.
Temperature: 56° F.
Water level: 29.0 feet below land surface Feb. 25, 1946.

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2 (a), Joseph Horne Co., Penn Ave. and Stanwix St., Pittsburgh.
Drilled in 1935 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 730 feet. Top of casing 18 feet below land surface.
Diameter of casing: 18 inches.
Depth: 67.5 feet below land surface.

Installation: Centrifugal pump.
Production: 150,000 gpd., operating 5 hours/day at 500 gpm.
Temperature: 58° F.
Water level: 26.0 feet below land surface Dec. 10, 1935.

.....

2 (b), Joseph Horne Co., Penn Ave. and Stanwix St., Pittsburgh.
Drilled in 1937 by Pennsylvania Drilling Co. Usage: Air conditioning.

Surface elevation: 730 feet. Top of casing 14.3 feet below land surface.
Diameter of casing: 18 inches.
Depth: 69.5 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

2 (b), (Continued).

Installation: Turbine pump.

Pumping test

Date: 1937.	Static level:	27 feet.
	Drawdown:	9 feet.
	Yield:	1,150 gpm.
	Specific capacity:	127.8.

Production: 621,000 gpd., operating 9 hours/day at 1,150 gpm., in summer only.
Temperature: 58° F.
Water level: 27.0 feet below land surface June 7, 1937.

.....
3, Allegheny County Steam Heating Co., Duquesne Way and Cecil Place,
Pittsburgh. Drilled in 1913 by Allen Drilling Co. Usage: Cooling.

Surface elevation: 730 feet. Top of casing 19 feet below land surface.
Diameter of casing: 12 inches.
Depth: 77.0 feet below land surface.

Installation: Reciprocating steam pump.
Production: 9,600 gpd., operating 6 hours/day at 40 gpm.
Temperature: 58° F.
Water level: 29.2 feet below land surface in 1928.

.....
4 (a), Manufacturer's Bldg., 540 Duquesne Way, Pittsburgh. Drilled in
1908 by Allen Drilling Co. Usage: General.

Surface elevation: 730 feet. Top of casing 22 feet below land surface.
Diameter of casing: 12 inches.
Depth: 70 feet below land surface.

Installation: Turbine pump.
Production: 324,000 gpd., operating 12 hours/day at 450 gpm.
Temperature: 54° F.
Water level: 34 feet below land surface in 1946.

.....
4 (b), Manufacturer's Bldg., 540 Duquesne Way, Pittsburgh. Drilled in
1908 by Allen Drilling Co. Usage: General.

Surface elevation: 730 feet. Top of casing 22 feet below land surface.
Diameter of casing: 12 inches.
Depth: 70 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

4 (b), (Continued).

Installation: Turbine pump.
Production: 324,000 gpd., operating 12 hours/day at 450 gpm.
Temperature: 54° F.
Water level: 34 feet below land surface in 1946.

.....
5, Walgreen Drug Co., 525 Penn Ave., Pittsburgh. Drilled in
1937 by Pennsylvania Drilling Co. Usage: Air conditioning.

Surface elevation: 730 feet. Top of casing 15 feet below land surface.
Diameter of casing: 6 inches.
Depth: 78.0 feet below land surface.

Installation: Turbine pump.
Production: 43,200 gpd., operating 12 hours/day at 60 gpm., in summer only.
Temperature: 58° F.
Water level: 30.0 feet below land surface in October 1937.

.....
6, Stouffer's Restaurant, 531 Penn Ave., Pittsburgh. Drilled in
1933 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 730 feet. Top of casing 15 feet below land surface.
Diameter of casing: 10 inches.
Depth: 79.5 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Basement		15
Fill	3.	18
Sandy clay	16.6	34.5
Sand and gravel.	34.5	69
Blue sandstone	10.5	79.5

Installation: Centrifugal pump.
Production: 72,000 gpd., operating 8 hours/day at 150 gpm.
Temperature: 58° F.
Water level: 30 feet below land surface in 1933.

.....
7, J. P. Harris Theater, 119 Sixth St., Pittsburgh. Drilled in
1935 by Pennsylvania Drilling Co. Usage: Air conditioning.

Surface elevation: 732.5 feet. Top of casing 5.5 feet below land surface.
Diameter of casing: 10 inches.
Depth: 68.2 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

7, (Continued).

Installation: Turbine pump; capacity, 250 gpm.; motor-30-hp.

Pumping test

Date: 1947.	Static level: 35.75.
	Drawdown: 6 feet.
	Yield: 250 gpm.
	Specific capacity: 42.

Production: 120,000 gpd., operating 10 hours/day at 200 gpm., in summer only.
Temperature: 54° F.
Water level: 35.75 feet below land surface March 11, 1947.

.....
8 (a), Roosevelt Hotel, Penn Ave. and Sixth St., Pittsburgh. Drilled in 1924. Usage: Air conditioning.

Surface elevation: 730 feet. Top of casing 14 feet below land surface.
Diameter of casing: 6 inches.
Depth: 68 feet below land surface.

Installation: Turbine pump; capacity, 450 gpm.
Production: 432,000 gpd., operating 16 hours/day at 450 gpm., in summer only.
Temperature: 60° F.
Water level: 38 feet below land surface in 1943.

.....
8 (b), Roosevelt Hotel, Penn Ave. and Sixth St., Pittsburgh. Drilled in 1943 by Robert Keaton. Usage: General.

Surface elevation: 730 feet. Top of casing 14 feet below land surface.
Diameter of casing: 8 inches.
Depth: 61 feet below land surface.

Installation: Turbine pump; capacity, 800 gpm.
Production: 864,000 gpd., operating 18 hours/day at 800 gpm.
Temperature: 60° F.
Water level: 38 feet below land surface in 1943.

.....
9, M. Bonn Co., 713 Penn Ave., Pittsburgh. Drilled in 1900.
Usage: General.

Surface elevation: 730 feet. Top of casing 10 feet below land surface.
Diameter of casing: 4 inches.
Depth: 75 feet below land surface.

Installation: Plunger pump.

Records of wells in the valley alluvium of Allegheny County

9, (Continued).

Production: 48,000 gpd., operating 16 hours/day at 50 gpm.
Water level: 34 feet below land surface in 1946.

.....

10, Arbuthnot - Stephenson Co., 801 Penn Ave., Pittsburgh.
Drilled in 1910. Usage: Drinking.

Surface elevation: 730 feet. Top of casing 8 feet below land surface.
Diameter of casing: 4 inches.
Depth: 50 feet below land surface.

Installation: Plunger pump.

Production: 5,400 gpd., operating 9 hours/day at 10 gpm.
Water level: 34 feet below land surface in 1946.

.....

11, Duff & Sons, Inc., 920 Duquesne Way, Pittsburgh. Drilled
in 1916 by Marshall Bros. Usage: General.

Surface elevation: 730 feet. Top of casing 12 feet below land surface.
Diameter of casing: 10 inches.
Depth: 62 feet below land surface.

Installation: Turbine pump; capacity, 200 gpm.

Production: Unused since company vacated.

Temperature: 54° F.

Water level: 34.8 feet below land surface May 8, 1947.

.....

12, Jenkins Arcade, Penn Ave. and Stanwix St., Pittsburgh. Drilled
in 1911 by Allen Drilling Co. Usage: General.

Surface elevation: 730 feet. Top of casing 18 feet below land surface.
Diameter of casing: 12 to 8 inches.
Depth: 83 feet below land surface.

Installation: Centrifugal pump; capacity, 200 gpm.; motor-25-hp.

Production: 120,000 gpd., operating 10 hours/day at 200 gpm.

Temperature: 58° F.

Water level: 30 feet below land surface in 1936.

.....

13, Empire Bldg., Liberty Ave. and Stanwix St., Pittsburgh.
Drilled in 1900 by Allen Drilling Co. Usage: General.

Surface elevation: 730 feet. Top of casing 20 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

13, (Continued).

Diameter of casing: 8 inches.
Depth: 82.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Yellow clay.	16	16
Yellow sandy loam.	2	18
Coarse sand and gravel	64	82

Installation: Centrifugal pump; capacity, 40 gpm.; motor-7½-hp.
Production: 24,000 gpd., operating 10 hours/day at 40 gpm.
Temperature: 58° F.
Water level: 32.0 feet below land surface in January, 1900.

.

14, Rosenbaum Co., Liberty Ave. and Sixth St., Pittsburgh. Drilled in 1914 by Allen Drilling Co. Usage: General.

Surface elevation: 732 feet. Top of casing 27 feet below land surface.
Diameter of casing: 12 inches.
Depth: 67 feet below land surface.

Installation: Centrifugal pump; capacity, 200 gpm.
Production: 96,000 gpd., operating 8 hours/day at 200 gpm.
Temperature: 58° F.
Water level: 32 feet below land surface in 1946.

.

15 (a), F. W. Woolworth Co., Liberty Ave. and Sixth St., Pittsburgh. Drilled in 1916 by Allen Drilling Co. Usage: General.

Surface elevation: 732 feet. Top of casing 9 feet below land surface.
Diameter of casing: 8 inches.
Depth: 69 feet below land surface.

Installation: Plunger pump; capacity, 100 gpm.; motor-10-hp.
Production: 144,000 gpd., operating 24 hours/day at 100 gpm.
Temperature: 60° F.
Water level: 32 feet below land surface in 1946.

.

15 (b), F. W. Woolworth Co., Liberty Ave. and Sixth St., Pittsburgh. Drilled in 1936 by Allen Drilling Co. Usage: Air conditioning.

Surface elevation: 732 feet. Top of casing 13 feet below land surface.
Diameter of casing: 12 inches.
Depth: 60 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

15 (b), (Continued).

Installation: Turbine type pump, motor-20-hp.
Production: 189,000 gpd., operating 9 hours/day at 350 gpm., in summer only.
Temperature: 60° F.
Water level: 32 feet below land surface in 1946.

.....

16, Keenan Bldg., Liberty Ave. and Seventh St., Pittsburgh. Drilled in 1912. Usage: General.

Surface elevation: 731 feet. Top of casing 17 feet below land surface.
Diameter of casing: 6 inches.
Depth: 90 feet below land surface.

Installation: Plunger pump.
Production: 54,000 gpd., operating 6 hours/day at 150 gpm.
Temperature: 60° F.
Water level: 30 feet below land surface in 1946.

.....

17 (a), Stanley Theatre, Penn Ave. and Seventh St., Pittsburgh. Drilled in 1926 by Pennsylvania Drilling Co. Usage: Air conditioning.

Surface elevation: 735 feet. Top of casing 16 feet below land surface.
Diameter of casing: 12 inches.
Depth: 111.0 feet below land surface.

Installation: Air lift.
Production: 108,000 gpd., operating 12 hours/day at 150 gpm., in summer only.
Drawdown: 2.5 feet at 150 gpm.
Temperature: 62° F.
Water level: 35.0 feet below land surface October 9, 1947.

.....

17 (b), Stanley Theatre, Penn Ave. and Seventh St., Pittsburgh. Drilled in 1926 by Pennsylvania Drilling Co. Usage: Air conditioning.

Surface elevation: 735 feet. Top of casing 16 feet below land surface.
Diameter of casing: 12 inches.
Depth: 108 feet below land surface.

Installation: Air lift.
Production: 108,000 gpd., operating 12 hours/day at 150 gpm., in summer only.
Temperature: 62° F.
Water level: 35 feet below land surface in October, 1947.

Records of wells in the valley alluvium of Allegheny County

17 (c), Stanley Theatre, Penn Ave. and Seventh St., Pittsburgh. Drilled in 1926 by Pennsylvania Drilling Co. Usage: Air conditioning.

Surface elevation: 735 feet. Top of casing 16 feet below land surface.
Diameter of casing: 12 inches.
Depth: 108 feet below land surface.

Installation: Air lift.
Production: Operates at 150 gpm. for emergency only.
Temperature: 62° F.
Water level: 35 feet below land surface in October, 1947.

.....

17 (d), Stanley Theatre, Penn Ave. and Seventh St., Pittsburgh. Drilled in 1926 by Pennsylvania Drilling Co. Usage: Air conditioning.

Surface elevation: 735 feet. Top of casing 16 feet below land surface.
Diameter of casing: 12 inches.
Depth: 108 feet below land surface.

Installation: Air lift.
Production: Operates at 150 gpm. for emergency only.
Temperature: 62° F.
Water level: 35 feet below land surface in October, 1947.

.....

18 (a), Clark Bldg., Liberty Ave. and Seventh St., Pittsburgh. Drilled in 1926 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 735 feet. Top of casing 16 feet below land surface.
Diameter of casing: 12 inches.
Depth: 108 feet below land surface.

Installation: Centrifugal pump.
Production: 72,000 gpd., operating 8 hours/day at 150 gpm.
Temperature: 62° F.
Water level: 35 feet below land surface in 1947.

.....

18 (b), Clark Bldg., Liberty Ave. and Seventh St., Pittsburgh. Drilled in 1926 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 735 feet. Top of casing 16 feet below land surface.
Diameter of casing: 12 inches.
Depth: 108 feet below land surface.

Installation: Air lift.
Production: Operates at 100 gpm. for emergency only.
Temperature: 62° F.
Water level: 35 feet below land surface in 1947.

Records of wells in the valley alluvium of Allegheny County

19, Renshaw Bldg., Liberty Ave. and Ninth St., Pittsburgh.
Drilled in 1907 by Allen Drilling Co. Usage: General.

Surface elevation: 735.5 feet. Top of casing 10 feet below land surface.
Diameter of casing: 6 inches.
Depth: 75 feet below land surface.

Installation: Plunger pump.
Production: 90,000 gpd., operating 10 hours/day at 150 gpm.
Temperature: 60° F.
Water level: 35 feet below land surface in 1946.

.....

20, May Stern Co., 914 Penn Ave., Pittsburgh. Drilled in 1940
by Robert Keaton. Usage: Air conditioning.

Surface elevation: 732 feet. Top of casing 10 feet below land surface.
Diameter of casing: 8 inches.
Depth: 71 feet below land surface.

Installation: Turbine pump; motor-7½-hp.
Drawdown: 2 feet at 150 gpm.
Production: 72,000 gpd., operating 8 hours/day at 150 gpm., in summer
only.
Temperature: 60° F.
Water level: 36 feet below land surface in 1940.

.....

21 (a), Fort Pitt Hotel, Penn Ave. and Tenth St., Pittsburgh.
Drilled in 1915. Usage: General.

Surface elevation: 737 feet. Top of casing 35.75 feet below land surface.
Diameter of casing: 10 inches.
Depth: 80 feet below land surface.

Installation: Turbine pump.
Production: 1,080,000 gpd., operating 24 hours/day at 750 gpm.
Temperature 56° F.
Water level: 40 feet below land surface in 1943.

.....

21 (b), Fort Pitt Hotel, Penn Ave. and Tenth St., Pittsburgh.
Drilled in 1941 by Robert Keaton. Usage: General.

Surface elevation: 737 feet. Top of casing 29.25 feet below land surface.
Diameter of casing: 12 inches.
Depth: 72.25 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

21 (b), (Continued).

Installation: Turbine pump.

Pumping test

Date: 1941.	Static level:	43 feet.
	Drawdown:	9 feet.
	Yield:	800 gpm
	Specific capacity:	88.8.

Production: 1,080,000 gpd., operating 24 hours/day at 750 gpm.

Temperature: 56° F.

Water level: 43.0 feet below land surface in March 1943.

.....

22 (a), Pennsylvania Railroad, 10th St. and Duquesne Way, Pittsburgh.
Drilled in 1937 by Harris Harmon Well Co. Usage: Yard requirements.

Surface elevation: 741 feet. Top of casing 4 feet above land surface.

Diameter of casing: 20 inches.

Depth: 80.0 feet below land surface.

Installation: Turbine pump; motor-60-hp.

Pumping test

Date: 1942.	Duration:	8 hours.
	Static level:	42 feet.
	Drawdown:	4 feet.
	Yield:	900 gpm.
	Specific capacity:	225.

Production: 864,000 gpd., operating 24 hours/day at 600 gpm.

Temperature: 58° F.

Water level: 42.0 feet below land surface August 1, 1942.

.....

22 (b), Pennsylvania Railroad, 10th St. and Duquesne Way, Pittsburgh.
Drilled in 1939 by Ohio Drilling Co. Usage: Yard requirements.

Surface elevation: 746 feet.

Diameter of casing: 20 inches to 10 inches to depth of 65 feet: 20 feet
of screen at bottom.

Depth: 85.0 feet below land surface.

Installation: Turbine pump; capacity, 1,100 gpm; motor-60-hp.

Pumping test

Date: 1942.	Duration:	8 hours.
	Static level:	54 feet..
	Drawdown:	7 feet.
	Yield:	900 gpm.
	Specific capacity:	128.

Records of wells in the valley alluvium of Allegheny County

22 (b), (Continued).

Production: 864,000 gpd., operating 24 hours/day at 600 gpm.
Temperature: 58° F.
Water level: 47.0 feet below land surface August 18, 1942.

.....

22 (c), Pennsylvania Railroad, 10th St. and Duquesne Way, Pittsburgh.
Drilled in 1939 by Ohio Drilling Co. Usage: Yard requirements.

Surface elevation: 746 feet.
Diameter of casing: 20 inches to 10 inches to depth of 66 feet; 20 feet of screen at bottom.
Depth: 86.0 feet below land surface.

Installation: Turbine pump; capacity, 1,100 gpm; motor-60-hp.

Pumping test

Date: 1942.	Duration:	8 hours.
	Static level:	51 feet.
	Drawdown:	5 feet.
	Yield:	1,000 gpm.
	Specific capacity:	200.

Production: 720,000 gpd., operating 24 hours/day at 500 gpm.
Temperature: 58° F.
Water level: 46.0 feet below land surface September 1, 1942.

.....

23 (a), Union Storage Co., Water and Short Sts., Pittsburgh.
Drilled in 1912. Usage: Cooling.

Surface elevation: 730 feet. Top of casing 12 feet below land surface.
Diameter of casing: 14 to 8 inches.
Depth: 61.25 feet below land surface.

Installation: Turbine pump; capacity, 600 gpm.; motor-15-hp.
Drawdown: 12 feet at 500 gpm.
Production: 720,000 gpd., operating 24 hours/day at 500 gpm., in winter only.
Temperature: 57° F.
Water level: 27 feet below land surface in September, 1947.

.....

23 (b), Union Storage Co., Water and Short Sts., Pittsburgh.
Drilled in 1941 by Ohio Drilling Co. Usage: Cooling.

Surface elevation: 730 feet. Top of casing 12 feet below land surface.
Diameter of casing: 14 inches to depth of 43 feet; 15 feet of bronze screen at bottom.

Records of wells in the valley alluvium of Allegheny County

23 (b), (Continued).

Depth: 70 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Basement.		12
Sand and clay	10	22
Sand, gravel, and clay.	18	40
Sand and clay	10	50
Gravel and sand	20	70

Installation: Turbine pump; capacity, 800 gpm; motor-20-hp.

Pumping test

Date: 1941. Static level: 25 feet.
 Drawdown: 15 feet.
 Yield: 925 gpm.
 Specific capacity: 61.7

Production: 1,008,000 gpd., operating 24 hours/day at 700 gpm., in summer only.

Temperature: 57° F.

Water level: 25.0 feet below land surface in August, 1941.

.

24, Pittsburgh & West Virginia Railroad, Water and Ferry Sts.,
Pittsburgh: Drilled in 1908. Usage: Cooling, drinking.

Surface elevation: 736 feet. Top of casing 7 feet below land surface.

Diameter of casing: 10 inches.

Depth: 57 feet below land surface.

Installation: Turbine pump.

Production: Not in use.

Temperature: 57° F.

Water level: 25 feet below land surface in August, 1946.

.

25, Tranter Mfg. Co., 105 Water St., Pittsburgh. Drilled in 1908.
Usage: General.

Surface elevation: 736 feet. Top of casing 9 feet below land surface.

Diameter of casing: 4 inches.

Depth: 80 feet below land surface.

Installation: Plunger pump.

Production: 1,800 gpd., operating 3 hours/day at 10 gpm.

Temperature: 58° F.

Water level: 33 feet below land surface in 1946.

Records of wells in the valley alluvium of Allegheny County

26, Pittsburgh Trolley & Forge Co., 117 Water St., Pittsburgh.
Drilled in 1916 by Allen Drilling Co. Usage: General.

Surface elevation: 740 feet. Top of casing 3 feet below land surface.
Diameter of casing: 8 inches.
Depth: 78 feet below land surface.

Installation: Plunger pump; motor-3-hp.
Production: 12,000 gpd., operating 10 hours/day at 20 gpm.
Temperature: 54° F.
Water level: 33 feet below land surface in 1946.

.....

27, McCann & Co., Diamond and Ferry Sts., Pittsburgh. Drilled in
1935. Usage: Cooling.

Surface elevation: 736 feet. Top of casing 18 feet below land surface.
Diameter of casing: 20 inches.
Depth: 68 feet below land surface.

Installation: Turbine pump.
Drawdown: 4 feet at 275 gpm.
Production: 132,000 gpd., operating 8 hours/day at 275 gpm.
Temperature: 60° F.
Water level: 33.0 feet below land surface May 3, 1935.

.....

28, Pitt Bank Bldg., Liberty and Fifth Aves., Pittsburgh. Drilled
in 1926. Usage: General.

Surface elevation: 730 feet. Top of casing 17 feet below land surface.
Diameter of casing: 10 inches.
Depth: 60 feet below land surface.

Installation: Centrifugal pump; capacity, 50 gpm; motor-2-hp.
Production: 15,000 gpd., operating 5 hours/day at 50 gpm.
Temperature: 60° F.
Water level: 33 feet below land surface in 1946.

.....

29, H. A. Speer Dairy Co., 433 Market St., Pittsburgh. Drilled
in 1935. Usage: General.

Surface elevation: 738 feet. Top of casing 10 feet below land surface.
Diameter of casing: 6 inches.
Depth: 75 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

29, (Continued).

Installation: Turbine pump; motor-3-hp.
Production: 72,000 gpd., operating 24 hours/day at 50 gpm.
Temperature: 55° F.
Water level: 35 feet below land surface in 1946.

.....

30, Weaver Costello Candy Co., 234 Boulevard of the Allies, Pittsburgh.
Drilled in 1902. Usage: Cooling.

Surface elevation: 738 feet. Top of casing 12 feet below land surface.
Diameter of casing: 8 inches.
Depth: 62 feet below land surface.

Installation: Turbine pump; capacity, 50 gpm; motor-5-hp.
Production: 24,000 gpd., operating 8 hours/day at 50 gpm.
Temperature: 58° F.
Water level: 34 feet below land surface in 1946.

.....

31, Benedum - Trees Bldg., 223 Fourth Ave., Pittsburgh. Drilled in
1906. Usage: General.

Surface elevation: 740 feet. Top of casing 26 feet below land surface.
Diameter of casing: 10 inches.
Depth: 68 feet below land surface.

Installation: Turbine pump; capacity, 600 gpm.; motor-15-hp.
Production: 90,000 gpd., operating 12 hours/day at 125 gpm.
Water level: 38 feet below land surface in 1946.

.....

32, G. C. Murphy Co., 228 Fifth Ave., Pittsburgh. Drilled in 1931 by
Pennsylvania Drilling Co. Usage: General.

Surface elevation: 740 feet. Top of casing 12 feet below land surface.
Diameter of casing: 12 inches.
Depth: 69 feet below land surface.

Installation: Turbine pump.
Production: 475,200 gpd., operating 24 hours/day at 330 gpm.
Water level: 40 feet below land surface in 1946.

.....

33, Donahoe Co., 242 Fifth Ave., Pittsburgh. Drilled in 1923 by
Pennsylvania Drilling Co. Usage: General.

Surface elevation: 738 feet. Top of casing 14 feet below land surface.
Diameter of casing: 14 inches.
Depth: 66 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

33, (Continued).

Installation: Turbine pump.
Drawdown: 1.3 feet at 250 gpm.
Production: 180,000 gpd., operating 12 hours/day at 250 gpm.
Temperature: 60° F.
Water level: 40 feet below land surface in 1946.

34, Hacke Bldg., 207 Fifth Ave., Pittsburgh. Drilled in 1946
by Robert Keaton. Usage: Air conditioning.

Surface elevation: 738 feet. Top of casing 20 feet below land surface.
Diameter of casing: 8 inches.
Depth: 65 feet below land surface.

Installation: Plunger pump.
Drawdown: 2 feet at 100 gpm.
Production: 60,000 gpd., operating 10 hours/day at 100 gpm., in summer
only.
Water level: 40 feet below land surface in 1946.

35, People's First National Bank & Trust Co., Fifth Ave. and
Wood St., Pittsburgh. Drilled in 1900 by Keystone Drilling Co.
Usage: General.

Surface elevation: 738 feet. Top of casing 22 feet below land surface.
Diameter of casing: 12 inches.
Depth: 66.0 feet below land surface.

Installation: Plunger pump.
Production: 115,200 gpd., operating 24 hours/day at 80 gpm.
Temperature: 58° F.
Water level: 39.0 feet below land surface September 30, 1947.

36, Meyer Jonasson & Co., Liberty and Oliver Aves., Pittsburgh.
Drilled in 1922 by Allen Drilling Co. Usage: General.

Surface elevation: 734 feet. Top of casing 13 feet below land surface.
Diameter of casing: 10 inches.
Depth: 63 feet below land surface.

Installation: Turbine pump.
Production: 150,000 gpd., operating 10 hours/day at 250 gpm.
Water level: 31 feet below land surface in 1946.

Records of wells in the valley alluvium of Allegheny County

37, Hardy Hayes Bldg., Oliver Ave. and Wood St., Pittsburgh. Drilled in 1910. Usage: General.

Surface elevation: 735 feet. Top of casing 20 feet below land surface.
Diameter of casing: 12 inches.
Depth: 75 feet below land surface.

Installation: Plunger pump.
Production: 24,000 gpd., operating 8 hours/day at 50 gpm.
Water level: 38 feet below land surface in 1946.

.....

38, Hughes & Hatcher, 531 Wood St., Pittsburgh. Drilled in 1946 by Pennsylvania Drilling Co. Usage: Air conditioning.

Surface elevation: 734 feet. Top of casing 12 feet below land surface.
Diameter of casing: 10 inches.
Depth: 68.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Basement.		12
Sand and gravel	21	33
Sand and gravel, clay	10	43
Sand and gravel	25	68

Installation: Turbine pump.

Pumping test

Date: 1946.	Duration: 8 hours.
	Static level: 45 feet.
	Drawdown: 3 feet.
	Yield: 180 gpm.
	Specific capacity: 60.

Production: 210,000 gpd., operating 10 hours/day at 350 gpm., in summer only.
Temperature: 58° F.
Water level: 45.0 feet below land surface September 15, 1946.

.....

39, Max Azen Inc., Sixth Ave. & Wood St., Pittsburgh. Drilled in 1946 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 734 feet. Top of casing 10 feet below land surface.
Diameter of casing: 10 inches.
Depth: 63.2 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

39, (Continued).

Installation: Turbine pump; capacity, 600 gpm.

Pumping test

Date: 1946.	Duration:	1½ hours.
	Static level:	35.5 feet.
	Drawdown:	3 feet.
	Yield:	400 gpm.
	Specific capacity:	133.

Production: 432,000 gpd., operating 24 hours/day at 300 gpm.
Temperature: 58° F.
Water level: 35.5 feet below land surface October 18, 1946.

.....

40, People's First National Bank & Trust Co., Fourth Ave. and Wood St., Pittsburgh. Drilled by Allen Drilling Co. Usage: General.

Surface elevation: 736 feet. Top of casing 14 feet below land surface.
Diameter of casing: 4 inches.
Depth: 96 feet below land surface.

Installation: Plunger pump.
Production: 43,200 gpd., operating 24 hours/day at 30 gpm.
Water level: 40 feet below land surface in 1946.

.....

41, Farmer's Bank Bldg., Fifth Ave. and Wood St., Pittsburgh. Drilled in 1904 by Allen Drilling Co. Usage: General.

Surface elevation: 736 feet. Top of casing 27.5 feet below land surface.
Diameter of casing: 12 to 10 inches.
Depth: 61.2 feet below land surface.

Installation: Turbine pump.
Drawdown: 8 feet at 200 gpm.
Production: 96,000 gpd., operating 8 hours/day at 200 gpm.
Water level: 44.5 feet below land surface in April, 1947.

.....

42,(a), Spear & Co., Sixth Ave. and Wood St., Pittsburgh. Drilled in 1924 by Pennsylvania Drilling Co. Usage: Drinking.

Surface elevation: 736 feet. Top of casing 16 feet below land surface.
Diameter of casing: 8 inches.
Depth: 71 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

42 (a), (Continued).

Installation: Plunger pump.
Production: 48,000 gpd., operating 4 hours/day at 200 gpm.
Water level: 38 feet below land surface in 1946.

42 (b), Spear & Co., Sixth Ave. and Wood St., Pittsburgh. Drilled in 1940 by Robert Keaton. Usage: Air conditioning.

Surface elevation: 736 feet. Top of casing 16 feet below land surface.
Diameter of casing: 12 inches.
Depth: 80.3 feet below land surface.

Installation: Turbine pump.
Drawdown: 17 feet at 1,000 gpm.
Production: 720,000 gpd., operating 12 hours/day at 1,000 gpm., in summer only.
Water level: 38 feet below land surface in 1946.

43, Oliver Bldg., Sixth Ave. and Smithfield St., Pittsburgh. Drilled in 1909 by Allen Drilling Co. Usage: General.

Surface elevation: 740 feet. Top of casing 27 feet below land surface.
Diameter of casing: 12 inches.
Depth: 72.0 feet below land surface.

<u>Chemical analysis</u>		<u>Results in parts per million</u>
Chloride (Cl)		27.0
Sulfate (SO ₄)		129.0
Nitrite (NO ₂)		0.002
Nitrate (NO ₃)		1.8
Calcium (Ca)		87.0
Magnesium (Mg)		10.0
Iron (Fe)		0.06
Alkalinity		152.0
Total solids		423.0
Loss on ignition		34.0

Installation: Three centrifugal pumps.
Production: 232,200 gpd., operating 18 hours/day at 215 gpm.
Water level: 44.0 feet below land surface May 17, 1948.

44, Eastman Kodak Co., 606 Wood St., Pittsburgh. Drilled in 1915.
Usage: Photographic development.

Surface elevation: 736 feet. Top of casing 10 feet below land surface.
Diameter of casing: 4 inches.
Depth: 80 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

44, (Continued).

Installation: Plunger pump.

Production: 2,000 gpd., operating when needed in summer only.

Water level: 35 feet below land surface in 1946.

.....
45 (a), Duquesne Club, 325 Sixth Ave., Pittsburgh. Drilled in 1910. Usage: General.

Surface elevation: 738 feet. Top of casing 7.5 feet below land surface.

Diameter of casing: 12 inches.

Depth: 63.0 feet below land surface.

Installation: Centrifugal pump.

Drawdown: 10 feet at 125 gpm.

Production: 135,000 gpd., operating 18 hours/day at 125 gpm.

Water level: 40 feet below land surface in 1946.

.....
45 (b), Duquesne Club, 325 Sixth Ave., Pittsburgh. Drilled in 1932 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 738 feet. Top of casing 7.5 feet below land surface.

Diameter of casing: 12 inches.

Depth: 70.5 feet below land surface.

Installation: Centrifugal pump.

Drawdown: 10 feet at 125 gpm.

Production: 135,000 gpd., operating 18 hours/day at 125 gpm.

Temperature: 65° F.

Water level: 40 feet below land surface in 1946.

.....
46 (a), Gimbel's, Sixth Ave. and Smithfield St., Pittsburgh. Drilled in 1916. Usage: General.

Surface elevation: 740 feet. Top of casing 50 feet below land surface.

Diameter of casing: 10 inches.

Depth: 90 feet below land surface.

Installation: Centrifugal pump.

Production: 120,000 gpd., operating 8 hours/day at 250 gpm.

Water level: 60 feet below land surface in 1946.

.....
46 (b), Gimbel's, Sixth Ave. and Smithfield St., Pittsburgh. Drilled in 1910. Usage: General.

Records of wells in the valley alluvium of Allegheny County

46 (b), (Continued).

Surface elevation: 738 feet. Top of casing 50 feet below land surface.
Diameter of casing: 10 inches.
Depth: 90 feet below land surface.

Installation: Centrifugal pump.
Drawdown: 10 feet at 125 gpm.
Production: 135,000 gpd., operating 18 hours/day at 125 gpm.
Water level: 60 feet below land surface in 1946.

.....
46 (c), Gimbel's, Sixth Ave. and Smithfield St., Pittsburgh. Drilled
in 1936 by Pennsylvania Drilling Co. Usage: Air conditioning.

Surface elevation: 740 feet. Top of casing 50 feet below land surface.
Diameter of casing: 18 inches.
Depth: 90 feet below land surface.

Installation: Centrifugal pump; capacity, 1,000 gpm.
Production: 351,000 gpd., operating 9 hours/day at 650 gpm., in summer only.
Temperature: 60° F.
Water level: 60 feet below land surface in 1946.

.....
47 (a), Bell Telephone Co., 416 Seventh Ave., Pittsburgh. Drilled
in 1906. Usage: Drinking.

Surface elevation: 745 feet. Top of casing 21.5 feet below land surface.
Diameter of casing: 12 inches.
Depth: 80.9 feet below land surface.

Chemical analysis

Results in parts per million
(Nov. 9, 1939)

Silica (SiO ₂)	22.0
Iron (Fe)	0.7
Calcium (Ca)	66.0
Magnesium (Mg)	12.0
Bicarbonate (HCO ₃)	158.0
Sulfate (SO ₄)	104.0
Chloride (Cl)	53.0
Nitrate (NO ₃)	0.0
pH	6.95
Total solids	483.0
Total hardness	194.0
Volatile and organic matter	96.0

Installation: Turbine pump; capacity, 50 gpm; motor-3-hp.
Drawdown: 4 feet at 40 gpm.
Production: 36,000 gpd., operating 15 hours/day at 40 gpm.
Temperature: 66° F.
Water level: 47.5 feet below land surface December 26, 1944.

Records of wells in the valley alluvium of Allegheny County

47 (b), Bell Telephone Co., 416 Seventh Ave., Pittsburgh. Drilled in 1941 by Pennsylvania Drilling Co. Usage: Emergency engine cooling.

Surface elevation: 745 feet.
Diameter of casing: 18 inches.
Depth: 78.0 feet below land surface.

Installation: Turbine pump; capacity, 400 gpm; motor-14-hp.

<u>Chemical analysis</u>	
	<u>Results in parts per million</u>
	(Mar. 3, 1941)
Iron (Fe)	0.15
Calcium (Ca)	73.0
Magnesium (Mg)	6.0
Sulfate (SO ₄)	97.0
Chloride (Cl)	34.0
Nitrate (NO ₃)	1.6
pH	7.2
Alkalinity	140.0
Total solids	393.0
Total hardness	207.0
Volatile and organic matter	60.0

Production: Operates 2 hours/week at 100 gpm.
Temperature: 66° F.
Water level: 47 feet below land surface in 1944.

.....

47 (c), Bell Telephone Co., 416 Seventh Ave., Pittsburgh. Drilled in 1942 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 745 feet. Top of casing 11 feet below land surface.
Diameter of casing: 12 inches.
Depth: 78.0 feet below land surface.

Installation: Turbine pump; capacity, 100 gpm; motor-25-hp.
Drawdown: 6 feet at 100 gpm.
Production: 60,000 gpd., operating 10 hours/day at 100 gpm.
Temperature: 66° F.
Water level: 47 feet below land surface in 1944.

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48, Chamber of Commerce Bldg., Seventh Ave. and Smithfield St., Pittsburgh. Drilled in 1916. Usage: General.

Surface elevation: 740 feet. Top of casing 23.5 feet below land surface.
Diameter of casing: 12 to 6 inches.
Depth: 67.8 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

48, (Continued).

Installation: Turbine pump.

Production: 54,000 gpd., operating 10 hours/day at 90 gpm.

Water level: 45.5 feet below land surface March 22, 1946.

49, Senator Theater, 956 Liberty Ave., Pittsburgh. Drilled in 1947 by Pennsylvania Drilling Co. Usage: Air conditioning.

Surface elevation: 742 feet. Top of casing 4 feet below land surface.

Diameter of casing: 12 inches.

Depth: 71.4 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Well pit.		4
Pea gravel, some sand	10	14
Large gravel.	28	42
Clay.	2	44
Large gravel, some medium gravel, fine sand . . .	10	54
Medium gravel, some sand.	10	64
Gravel.	3	67
Red clay.	4.4	71.4

Installation: Turbine pump; capacity, 200 gpm.; motor-25-hp.

Pumping test

Date: 1947.

Static level: 49.8 feet.

Drawdown: 3.25 feet.

Yield: .87 gpm.

Specific capacity: 26.8.

Production: 144,000 gpd., operating 12 hours/day at 200 gpm. in summer only.

Temperature: 63° F.

Water level: 49.8 feet below land surface August 25, 1947.

50, Christian & Co., 1121 Penn Ave., Pittsburgh. Drilled in 1930. Usage: Cooling.

Surface elevation: 740 feet. Top of casing 10 feet below land surface.

Diameter of casing: 8 inches.

Depth: 90 feet below land surface.

Installation: Turbine pump; motor-5-hp.

Production: Operates at 150 gpm. Not in use at present.

Water level: 40 feet below land surface in 1947.

Records of wells in the valley alluvium of Allegheny County

51, Byrnes & Kiefer Co., 1133 Penn Ave., Pittsburgh. Drilled in 1947 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 740 feet. Top of casing 10 feet below land surface.
Diameter of casing: 10 inches to depth of 64 feet. 10 feet of screen at bottom.

Depth: 74.0 feet below land surface.

Installation: Turbine pump; capacity, 65 gpm.

Pumping test

Date: 1947,	Static level:	44 feet.
	Drawdown:	1 foot.
	Yield:	65 gpm.
	Specific capacity:	65.

Production: 39,000 gpd., operating 10 hours/day at 65 gpm.

Temperature: 60° F.

Water level: 44.0 feet below land surface December 30, 1947.

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52, Wilson & Co., 12th and Smallman Sts., Pittsburgh. Drilled in 1936 by G. M. Baker & Son. Usage: General.

Surface elevation: 736 feet. Top of casing 10 feet below land surface.
Diameter of casing: 12 inches.
Depth: 70 feet below land surface.

Installation: Turbine pump.

Production: 273,600 gpd., operating 24 hours/day at 190 gpm.

Temperature: 56° F.

Water level: 38 feet below land surface in 1946.

.....

53, Hardie Bros., 14th and Smallman Sts., Pittsburgh. Drilled in 1923 by Allen Drilling Co. Usage: General.

Surface elevation: 735 feet. Top of casing 23.5 feet below land surface.
Diameter of casing: 12 inches.
Depth: 89 feet below land surface.

Installation: Reciprocating pump.

Production: 240,000 gpd., operating 8 hours/day at 500 gpm.

Temperature: 58° F.

Water level: 42 feet below land surface in 1947.

Records of wells in the valley alluvium of Allegheny County

54, Federal Cold Storage Co., 15th and Smallman Sts., Pittsburgh.
Drilled in 1930 by Ohio Drilling Co. Usage: Cooling.

Surface elevation: 733 feet.

Diameter of casing: 12 inches to depth of 39 feet; 27 feet of iron
screen at bottom.

Depth: 66.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	18	18
Clay.	14	32
Gravel and sand	34	66

Installation: Turbine pump.

Pumping test

Date: 1930.	Static level:	30 feet.
	Drawdown:	5 feet.
	Yield:	1,200 gpm.
	Specific capacity:	240.

Production: 1,296,000 gpd., operating 24 hours/day at 900 gpm.

Temperature: 58° F.

Water level: 30.0 feet below land surface in 1930.

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55, Kroger Grocery Co., 21st St. and Allegheny Valley R. R., Pittsburgh.
Drilled in 1934. Usage: General.

Surface elevation: 728 feet.

Diameter of casing: 8 inches.

Depth: 56.2 feet below land surface.

Installation: Centrifugal pump.

Production: 144,000 gpd., operating 8 hours/day at 300 gpm.

Temperature: 54° F.

Water level: 26 feet below land surface in 1934.

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56, Munroe Boiler Co., 23rd and Smallman Sts., Pittsburgh. Drilled
in 1930. Usage: Drinking, cooling.

Surface elevation: 735 feet. Top of casing 8 feet below land surface.

Diameter of casing: 6 inches.

Depth: 70 feet below land surface.

Installation: Reciprocating pump.

Production: 14,400 gpd., operating 8 hours/day at 30 gpm.

Temperature: 54° F.

Water level: 35 feet below land surface in 1946.

Records of wells in the valley alluvium of Allegheny County

57 (a), Otto Milk Co., 24th and Smallman Sts., Pittsburgh. Drilled in 1938 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 736 feet. Top of casing 12 feet below land surface.
Diameter of casing: 12 inches.
Depth: 62 feet below land surface.

Installation: Turbine pump.
Production: 432,000 gpd., operating 18 hours/day at 400 gpm.
Temperature: 60° F.
Water level: 35 feet below land surface in 1946.

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57 (b), Otto Milk Co., 24th and Smallman Sts., Pittsburgh. Drilled in 1940 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 736 feet. Top of casing 2 feet above land surface.
Diameter of casing: 12 inches.
Depth: 62 feet below land surface.

Installation: Turbine pump.
Production: Operates at 300 gpm. for emergency only.
Temperature: 60° F.
Water level: 35 feet below land surface in 1946.

.....

57 (c), Otto Milk Co., 24th and Smallman Sts., Pittsburgh. Drilled in 1946 by Robert Keaton. Usage: Cooling.

Surface elevation: 736 feet. Top of casing 20 feet below land surface.
Diameter of casing: 12 inches.
Depth: 62 feet below land surface.

Installation: Turbine pump; capacity, 1,000 gpm.
Production: 288,000 gpd., operating 8 hours/day at 600 gpm.
Temperature: 60° F.
Water level: 35 feet below land surface in 1946.

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58 (a), Armstrong Cork Co., 24th St. and Allegheny Valley R. R., Pittsburgh. Drilled in 1907. Usage: Cooling.

Surface elevation: 730 feet.
Diameter of casing: 6 inches.
Depth: 60 feet below land surface.

Installation: Centrifugal pump; capacity, 300 gpm.; motor-10-hp.
Production: 432,000 gpd., operating 24 hours/day at 300 gpm.
Temperature: 52° F.
Water level: 30 feet below land surface in 1943.

Records of wells in the valley alluvium of Allegheny County

58 (b), Armstrong Cork Co., 24th St. and Allegheny Valley R. R.,
Pittsburgh. Drilled in 1943. Usage: Cooling.

Surface elevation: 730 feet.
Diameter of casing: 6 inches.
Depth: 60 feet below land surface.

Installation: Centrifugal pump; capacity, 300 gpm.; motor-10-hp.
Production: 216,000 gpd., operating 12 hours/day at 300 gpm.
Temperature: 52° F.
Water level: 30 feet below land surface in 1943.

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59 (a), Fairmont Foods Co., 25th and Smallman Sts., Pittsburgh.
Drilled in 1923 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 737 feet. Top of casing 19 feet below land surface.
Diameter of casing: 12 inches.
Depth: 65 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.
Drawdown: 3 feet at 500 gpm.
Production: 300,000 gpd., operating 10 hours/day at 500 gpm.
Temperature: 63° F.
Water level: 38 feet below land surface in 1946.

.....
59 (b), Fairmont Foods Co., 25th and Smallman Sts., Pittsburgh.
Drilled in 1932 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 737 feet. Top of casing 19 feet below land surface.
Diameter of casing: 12 inches.
Depth: 65 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.
Drawdown: 3 feet at 500 gpm.
Production: 720,000 gpd., operating 24 hours/day at 500 gpm.
Temperature: 63° F.
Water level: 38 feet below land surface in 1946.

.....
60, Simonds Gear and Manufacturing Co., 25th St. and Liberty Ave.,
Pittsburgh. Drilled in 1912. Usage: General.

Surface elevation: 742 feet.
Diameter of casing: 4 inches.
Depth: 70 feet below land surface.

Installation: Plunger pump.
Production: 9,600 gpd., operating 4 hours/day at 40 gpm.
Water level: 30 feet below land surface in 1912.

Records of wells in the valley alluvium of Allegheny County

61, Kerotest Manufacturing Co., 2525 Liberty Ave., Pittsburgh.
Drilled in 1912. Usage: Cooling.

Surface elevation: 743 feet.
Diameter of casing: 5 inches.
Depth: 150 feet below land surface.

Installation: Turbine pump; capacity, 100 gpm.; motor-5-hp.
Production: 108,000 gpd., operating 18 hours/day at 100 gpm.
Temperature: 54° F.
Water level: 60 feet below land surface in 1946.

62, Seaboard Glass Bottle Co., 26th St. and Allegheny Valley R. R.,
Pittsburgh. Drilled in 1901. Usage: General.

Surface elevation: 733 feet.
Diameter of casing: 6 inches.
Depth: 90 feet below land surface.

Installation: Turbine pump.
Production: 79,200 gpd., operating 24 hours/day at 55 gpm.
Water level: 26 feet below land surface in 1901.

63, Reliance Steel Casting Co., 28th and Smallman Sts., Pittsburgh.
Drilled in 1946 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 732 feet. Top of casing 8 feet below land surface.
Diameter of casing: 10 inches.
Depth: 61.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Basement.		8
Clay.	20	28
River silt.	2	30
Sand and gravel	31	61

Installation: Turbine pump; capacity, 200 gpm.; motor-10-hp.

Pumping test

Date: 1946.	Static level:	29.8 feet.
	Drawdown:	8 feet.
	Yield:	200 gpm.
	Specific capacity:	25.

Production: 288,000 gpd., operating 24 hours/day at 200 gpm.
Water level: 29.8 feet below land surface December 7, 1946.

Records of wells in the valley alluvium of Allegheny County

64, Fabiricon Products Inc., of Pa., 28th St. and Allegheny Valley R. R., Pittsburgh. Drilled in 1932. Usage: Cooling.

Surface elevation: 730 feet. Top of casing 8.5 feet below land surface.
Diameter of casing: 8 inches.
Depth: 66.5 feet below land surface.

Installation: Turbine pump; motor-5-hp.
Production: 57,600 gpd., operating 24 hours/day at 40 gpm.
Temperature: 60° F.
Water level: 23 feet below land surface in 1932.

.....

65, Iron City Tool Works, 32nd and Smallman Sts., Pittsburgh. Drilled in 1904. Usage: General.

Surface elevation: 735 feet. Top of casing 8 feet below land surface.
Diameter of casing: 8 inches.
Depth: 83 feet below land surface.

Installation: Plunger pump.
Production: 9,600 gpd., operating 8 hours/day at 20 gpm.
Water level: 30 feet below land surface in 1942.

.....

66 (a), Duquesne Smelting Co., 33rd St. and Allegheny Valley R. R., Pittsburgh. Drilled in 1940 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 730 feet.
Diameter of casing: 10 inches.
Depth: 63 feet below land surface.

Installation: Turbine pump.
Production: 288,000 gpd., operating 16 hours/day at 300 gpm.
Temperature: 60° F.
Water level: 30 feet below land surface in 1940.

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66 (b), Duquesne Smelting Co., 33rd St. and Allegheny Valley R. R., Pittsburgh. Drilled in 1942 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 730 feet.
Diameter of casing: 10 inches.
Depth: 63 feet below land surface.

Installation: Turbine pump.
Production: Operates at 300 gpm. Intermittent use.
Temperature: 60° F.
Water level: 30 feet below land surface in 1942.

Records of wells in the valley alluvium of Allegheny County

67, Little American Frozen Foods Inc., 36th and Charlotte Sts.,
Pittsburgh. Drilled in 1924 by Allen Drilling Co. Usage: Cooling.

Surface elevation: 748 feet.
Diameter of casing: 8 inches.
Depth: 208.0 feet below land surface.

Installation: Turbine pump; capacity, 200 gpm.; motor-10-hp.
Production: 201,600 gpd., operating 24 hours/day at 140 gpm. in
summer only.
Temperature: 56° F.
Water level: 50 feet below land surface in 1947.

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68, Pittsburgh Rolls Division of Blaw-Knox Co., 41st and Willow
St., Pittsburgh. Drilled in 1938 by Ohio Drilling Co. Usage: Cooling,
drinking.

Surface elevation: 734 feet.
Diameter of casing: 12 inches to depth of 40 feet. 20 feet of bronze
screen at bottom.
Depth: 60.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Gravel and clay.	10	10
Sand	4	14
Gravel and clay.	5	19
Gravel, clay, and sand	22	41
Sand, gravel, little clay.	10.3	51.3
Clay and stones.	12.7	64
Sandrock	2	66

Installation: Centrifugal pump.

<u>Pumping test</u>		
Date: 1938.	Static level:	22 feet.
	Drawdown:	8 feet.
	Yield:	150 gpm.
	Specific capacity:	18.8.

Production: 115,200 gpd., operating 24 hours/day at 80 gpm.
Temperature: 62° F.
Water level: 22.0 feet below land surface in December, 1938.

.....

Records of wells in the valley alluvium of Allegheny County

69, Consolidated Ice Co., 43rd St. and Allegheny Valley R. R.,
Pittsburgh. Drilled in 1943 by Ohio Drilling Co. Usage: Cooling.

Surface elevation: 734 feet.

Diameter of casing: 20 to 10 inches to depth of 38.5 feet. 20 feet of
screen at bottom.

Depth: 58.5 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.

Pumping test

Date: 1942.

Static level: 24 feet.

Drawdown: 8 feet - 250 gpm.
10 " - 300 gpm.
12 " - 350 gpm.
15 " - 400 gpm.
23 " - 550 gpm.

Specific capacity: 24.

Production: 720,000 gpd., operating 24 hours/day at 500 gpm.

Temperature: 62° F.

Water level: 24.0 feet below land surface in April, 1942.

.....

70, Pittsburgh Piping and Equipment Co., 43rd St. and Allegheny
Valley R. R., Pittsburgh. Drilled in 1900. Usage: Cooling.

Surface elevation: 732 feet.

Diameter of casing: 6 inches.

Depth: 60 feet below land surface.

Chemical analysis

Results in parts per million

Sulfate (SO ₄)	71.07
Calcium oxide (CaO)	123.82
Magnesium oxide (MgO)	12.50
Iron oxide and Aluminum oxide (Fe ₂ O ₃) and (Al ₂ O ₃)	1.86
Alkalinity	265.21
Silica (SiO ₂)	14.06
pH	7.06

Installation: Plunger pump.

Production: 21,600 gpd., operating 6 hours/day at 60 gpm.

Water level: 24 feet below land surface in 1947.

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71, Atlantic and Pacific Tea Co., 43rd St. and Allegheny Valley R. R.,
Pittsburgh. Drilled in 1944 by G. M. Baker and Sons. Usage: Refrigeration.

Records of wells in the valley alluvium of Allegheny County

71, (Continued).

Surface elevation: 734 feet. Top of casing 4 feet above land surface.
Diameter of casing: 12 inches.
Depth: 70.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Black fill.	7	7
Yellow sand	28	35
Yellow sand and gravel.	3	38
Yellow sand	14	52
Gravel.	11	63
Clay and gravel	2	65
Clay and sand	4	69
Blue clay and shale	1	70

Installation: Turbine pump; motor-5-hp.

Production: 316,800 gpd., operating 24 hours/day at 220 gpm.
Temperature: 54° F.
Water level: 21.0 feet below land surface in May, 1944.

.....

72, Heppenstall Co., 46th and Hatfield St., Pittsburgh.
Drilled in 1917. Usage: Drinking.

Surface elevation: 734 feet. Top of casing 4 feet above land surface.
Diameter of casing: 6 inches.
Depth: 50 feet below land surface.

Installation: Turbine pump; motor-7½-hp.

Production: 72,000 gpd., operating 8 hours/day at 150 gpm.
Temperature: 58° F.
Water level: 26 feet below land surface in 1946.

.....

73, McConway-Torley, Inc., 48th St. and Allegheny Valley R. R.,
Pittsburgh. Drilled in 1937 by Robert Keaton. Usage: Drinking.

Surface elevation: 732 feet.
Diameter of casing: 6 inches to depth of 66 feet. 5 feet of screen
at bottom.
Depth: 71.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

73, (Continued).

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Surface fill.	12	12
Gray clay and sand.	14	26
Sand and gravel, red clay	4	30
Brown sand, clay, gravel.	30	60
Sand and gravel (water)	11	71

Installation: Turbine pump.

Pumping test

Date: 1937.	Static level:	22 feet.
	Drawdown:	4 feet.
	Yield:	65 gpm.
	Specific capacity:	16.

Production: 7,200 gpd., operating 24 hours/day at 5 gpm.
 Water level: 22.0 feet below land surface in November, 1937.

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 74, Pittsburgh Crushed Steel Co., 48th and Harrison St., Pittsburgh.
 Drilled in 1940. Usage: General.

Surface elevation: 742 feet.
 Diameter of casing: 8 inches.
 Depth: 75 feet below land surface.

Installation: Turbine pump; motor-3-hp.
 Production: 33,600 gpd., operating 8 hours/day at 70 gpm.
 Water level: 28 feet below land surface in 1940.

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 75, Pittsburgh Commercial Heat Treating Co., 49th St. and Allegheny Valley
 R. R., Pittsburgh. Drilled in 1943 by Ferguson Bros. Usage: Quenching steel.

Surface elevation: 740 feet.
 Diameter of casing: 6 inches.
 Depth: 65 feet below land surface.

Installation: Turbine pump.
 Production: 72,000 gpd., operating 24 hours/day at 50 gpm.
 Water level: 30 feet below land surface in 1943.

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 76, H. K. Porter Co., 49th St. and Allegheny Valley R. R., Pittsburgh.
 Drilled in 1900. Usage: Drinking.

Records of wells in the valley alluvium of Allegheny County

76, (Continued).

Surface elevation: 742 feet.
Diameter of casing: 4 inches.
Depth: 80 feet below land surface.

Installation: Plunger pump.
Production: 144,000 gpd., operating 16 hours/day at 150 gpm.
Temperature: 58° F.
Water level: 30 feet below land surface in 1940.

77, American Bridge Co., 52nd St. and Allegheny Valley R. R.,
Pittsburgh. Drilled in 1941 by Ohio Drilling Co. Usage: Cooling,
boilers.

Surface elevation: 745 feet.
Diameter of casing: 12 inches to depth of 41 feet. 20 feet of
bronze screen at bottom.
Depth: 61.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	11	11
Clay and stones	7	18
Clay and gravel	6	24
Gravel and clay	13.5	37.5
Gravel, sand and clay	11.2	48.7
Gravel, clay and sand	5.3	54
Clay and gravel	5.7	59.7
Clay and stones	5	64.7

Installation: Turbine pump; motor-10-hp.

Pumping test

Date: 1941. Drawdown: 1.5 feet.
 Yield: 425 gpm.
 Specific capacity: 283.3.

Production: 288,000 gpd., operating 24 hours/day at 200 gpm.
Water level: 32.0 feet below land surface in October, 1938.

78 (a), Crucible Steel Co. (Spring Works), McCandless Ave. and
Allegheny Valley R. R., Pittsburgh. Drilled in 1912. Usage: Cooling.

Records of wells in the valley alluvium of Allegheny County

78 (a), (Continued).

Surface elevation: 736 feet.
Type well: Dug, concrete lined.
Diameter of well: 16 feet.
Depth: 57.0 feet below land surface.

Installation: Two turbine pumps; capacity, 500 gpm. each; ~~motors~~-15-hp each.
Production: 480,000 gpd., operating 8 hours/day at 1,000 gpm.
Temperature: 55° F.
Water level: 30.3 feet below land surface on May 31, 1944.

.....
78 (b), Crucible Steel Co. (Spring Works), McCandless Ave. and Allegheny Valley R. R., Pittsburgh. Drilled in 1912. Usage: Drinking.

Surface elevation: 736 feet.
Diameter of casing: 4 inches.
Depth: 90 feet below land surface.

Installation: Plunger pump.
Production: 4,800 gpd., operating 8 hours/day at 10 gpm.
Temperature: 55° F.
Water level: 32 feet below land surface in 1944.

.....
79 (a), Westinghouse Electric Corp. (Nuttall Works), 200 McCandless Ave., near Allegheny Valley R. R., Pittsburgh. Drilled in 1934 by Allen Drilling Co. Usage: General.

Surface elevation: 741 feet.
Diameter of casing: 10 inches.
Depth: 86.0 feet below land surface.

Installation: Turbine pump.
Production: Operates at 350 gpm. Emergency use only.
Temperature: 57° F.
Water level: 32 feet below land surface in 1945.

.....
79 (b), Westinghouse Electric Corp. (Nuttall Works), 200 McCandless Ave., near Allegheny Valley R. R., Pittsburgh. Drilled in 1945 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 741 feet.
Diameter of casing: 12 inches.
Depth: 62.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

79 (b), (Continued).

Installation: Turbine pump.
Production: 360,000 gpd., operating 12 hours/day at 500 gpm.
Temperature: 57° F.
Water level: 32 feet below land surface in 1945.

.....

80 (a), Waverly Oil Works Co., 54th St. and Allegheny Valley
R. R., Pittsburgh. Drilled in 1920. Usage: Cooling.

Surface elevation: 740 feet.
Diameter of casing: 4 inches.
Depth: 70 feet below land surface.

Installation: Turbine pump.
Production: 144,000 gpd., operating 24 hours/day at 100 gpm.
Temperature: 60° F.
Water level: 28 feet below land surface in 1941.

.....

80 (b), Waverly Oil Works Co., 54th St. and Allegheny Valley
R. R., Pittsburgh. Drilled in 1941 by Ohio Drilling Co. Usage:
Cooling.

Surface elevation: 735 feet.
Diameter of casing: 12 inches to depth of 57 feet. 15 feet of
bronze screen at bottom.
Depth: 72.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill and cinders.	28	28
Sand, gravel and clay, hardpan.	5.3	33.3
Gravel and sand	5.7	39
Sand, gravel and clay	5	44
Sand, gravel and little clay.	9.75	53.75
Sand, gravel and streak hardpan	5.25	59
Sand, gravel and clay	12.5	71.5
Sandrock.	0.5	72

Installation: Turbine pump; capacity, 500 gpm.

Pumping test

Date: 1941.	Static level:	26.5 feet.
	Drawdown:	9 feet.
	Yield:	500 gpm.
	Specific capacity:	55.6.

Production: 720,000 gpd., operating 24 hours/day at 500 gpm.
Temperature: 60° F.
Water level: 26.5 feet below land surface on March 24, 1941.

Records of wells in the valley alluvium of Allegheny County

80 (c), Waverly Oil Works Co., 54th St. and Allegheny Valley R. R., Pittsburgh. Drilled in 1941 by Ohio Drilling Co. Usage: Cooling.

Surface elevation: 735 feet.

Diameter of casing: 12 inches to depth of 57 feet. 15 feet of bronze screen at bottom.

Depth: 72.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Cinders.	33.3	33.3
Hardpan, sand, clay and gravel	5.7	39
Sand and gravel.	5	44
Gravel, sand and little clay	10.25	54.25
Sand, gravel and clay.	4.75	59
Sand, gravel and little clay	14.5	73.5
Sandrock		73.5 +

Installation: Turbine pump; capacity, 500 gpm.

Pumping test

Date: 1941. Static level: 27 feet.
 Drawdown: 9 feet.
 Yield: 500 gpm.
 Specific capacity: 55.6.

Production: Operates when needed at 500 gpm.

Temperature: 60° F.

Water level: 27.0 feet below land surface, March 27, 1941.

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81, American Steel Foundries, Inc., Allegheny River Blvd., Verona. Drilled in 1944 by Layne-New York, Inc. Usage: Cooling.

Surface elevation: 745 feet. Top of casing 0.5 feet above land surface.

Diameter of casing: 12 inches to 8 inches to depth of 54.75 feet. 10 feet of bronze screen at bottom.

Depth: 64.75 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill	8.5	8.5
Gray clay.	3	11.5
Yellow sandy clay.	12	23.5
Coarse gravel and coarse brown sand.	12.5	36
Yellow sandy clay.	1	37
Coarse gravel and coarse yellow sand	14	51
Medium gravel and medium brown sand.	9	60
Coarse gravel and coarse brown sand.	4.5	64.5
Gray shale		64.5

Records of wells in the valley alluvium of Allegheny County

81, (Continued).

	<u>Chemical analysis</u>	
	<u>Results in parts per million</u> (Aug. 19, 1946) (Dec., 10, 1944)	
Iron (Fe)	32	28
Calcium (Ca).	73	--
Magnesium (Mg).	15	--
Manganese (Mn).	--	1.1
Sulfate (SO ₄)	128	--
Chloride (Cl)	15	16
Nitrate (NO ₃)	0.35	0.9
pH.	6.8	6.8
Bicarbonate (HCO ₃).	134	152
Hardness.	260	184
Total solids.	461	572
Source of analysis: E. C. Trax, Chemist, McKeesport, Pa., and Pittsburgh Testing Laboratory.		

Installation: Centrifugal pump; capacity, 200 gpm.; motor-40-hp.

Pumping test

Date: 1944.	Duration: 8 hours.
	Static level: 20 feet.
	Drawdown: 11 feet.
	Yield 200 gpm.
	Specific capacity: 18.2.

Production: 288,000 gpd., operating 24 hours/day at 200 gpm.

Water level: 20.0 feet below land surface May 19, 1944.

.....

82, Linde Air Products, E. Railroad and Grant Sts., Verona. Drilled in 1928 by Bert Schwer. Usage: Cooling.

Surface elevation: 745 feet.

Diameter of casing: 8 inches.

Depth: 120 feet below land surface.

Installation: Centrifugal pump; capacity, 50 gpm.; motor-3-hp.

Production: 30,000 gpd., operating 10 hours/day at 50 gpm.

Water level: 22 feet below land surface in 1945.

.....

83 (a), Edgewater Steel Co., Oakmont. Drilled in 1937 by Ohio Drilling Co. Usage: Cooling, boilers.

Surface elevation: 743 feet.

Diameter of casing: 36 to 18 inches to depth of 53 feet. 20 foot of bronze screen at bottom.

Depth: 73.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

83 (a), (Continued)

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Sand and clay.	20.8	20.8
Gravel and clay.	5	25.8
Gravel, sand and clay.	5.2	31
Sand and gravel.	5	36
Gravel	5.2	41.2
Gravel and sand.	31.5	72.7
Shale.	2.5	75.2

Installation: Centrifugal pump; capacity, 1,000 gpm.; motor-75-hp.

Pumping test

Date: 1937,	Static level:	22 feet.
	Drawdown:	13.5 feet.
	Yield:	1,500 gpm.
	Specific capacity:	111.1.

Production: Operates when needed at 600 gpm. Total plant pumpage 2,160,000 gpd.

Temperature: 56° F.

Water level: 21.0 feet below land surface August 20, 1937.

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83 (b), Edgewater Steel Co., Oakmont. Drilled in 1937 by Ohio Drilling Co. Usage: Cooling, boilers.

Surface elevation: 753 feet.

Diameter of casing: 36 to 18 inches to depth of 61 feet. 20 feet of bronze screen at bottom.

Depth: 81.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Ashes, slag, fill.	21	21
Clay	5.5	26.5
Clay and gravel.	10.5	37
Gravel and clay.	5.2	42.2
Gravel and sand.	10.1	52.3
Gravel, sand, some clay.	10.3	62.6
Gravel and sand.	19.4	82
Shale.	2	84

Records of wells in the valley alluvium of Allegheny County

83 (b), (Continued).

Installation: Centrifugal pump; capacity, 1,000 gpm.; motor-75-hp.

Pumping test

Date: 1937.	Static level:	30.5 feet.
	Drawdown:	15 feet.
	Yield:	1,300 gpm.
	Specific capacity:	86.7.

Production: Operates when needed at 600 gpm. Total plant pumpage 2,160,000 gpd.

Temperature: 56° F.

Water level: 32.0 feet below land surface August 24, 1937.

.....

83 (c), Edgewater Steel Co., Oakmont. Drilled in 1939 by Ohio Drilling Co. Usage: Cooling, boilers..

Surface elevation: 753 feet.

Diameter of casing: 16 inches to depth of 62 feet. 20 feet of bronze screen at bottom.

Depth: 82.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Ashes, slag, and fill	25.7	25.7
Clay and stones	11.8	37.5
Gravel, sand, and clay	15.3	52.8
Gravel and sand	9.8	62.6
Gravel, sand, and clay	9.6	72.2
Gravel and sand	9.3	81.5
Shale	0.5	82

Installation: Centrifugal pump; capacity, 1,000 gpm.; motor-75-hp.

Pumping test

Date: 1939.	Static level:	32 feet.
	Drawdown:	28 feet.
	Yield:	975 gpm.
	Specific capacity:	34.8.

Production: Operates when needed at 700 gpm. Total plant pumpage 2,160,000 gpd.

Temperature: 56° F.

Water level: 34.0 feet below land surface November 10, 1939.

Records of wells in the valley alluvium of Allegheny County

83 (d), Edgewater Steel Co., Oakmont. Drilled in 1942 by Ohio Drilling Co. Usage: Cooling, boilers.

Surface elevation: 753 feet.

Diameter of casing: 36 to 18 inches to depth of 62 feet. 20 feet of bronze screen at bottom.

Depth: 82.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Ashes and fill.	10	10
Soft yellow clay.	15	25
Sand, gravel, little clay	10	35
Gravel and clay	5	40
Gravel, sand, and clay.	5	45
Sand and gravel	5	50
Gravel, sand, and clay.	10	60
Gravel, clay, and sand.	10	70
Gravel and sand	5	75
Gravel, sand, and clay.	7	82

Chemical analysis

	<u>Results in parts per million</u>
Calcium sulfate (CaSO_4)	68.4
Magnesium sulfate (MgSO_4)	51.3
Sodium sulfate (Na_2SO_4)	23.9
Sodium chloride (NaCl)	64.8
Silica (SiO_2)	10.3
Permanent hardness.	102.6

Installation: Centrifugal pump; capacity, 1,000 gpm.; motor-75-hp.

Pumping test

Date: 1942. Static level: 37 feet.
 Drawdown: 15 feet.
 Yield: 1,150 gpm.
 Specific capacity: 76.7.

Production: Operates when needed at 700 gpm. Total plant pumpage 2,160,000 gpd

Temperature: 56° F.

Water level: 34.0 feet below land surface October 19, 1941.

.
84, U. S. Gypsum Co., 1155 Allegheny Ave., Oakmont. Drilled in 1939 by Layne-New York Co., Inc. Usage: Processing, cooling.

Surface elevation: 730 feet. Top of casing 15 feet above land surface.

Diameter of casing: 24 to 16 inches to depth of 33.75 feet. 15.25 feet of screen at bottom.

Depth: 49.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

84, (Continued).

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Soil	4	4
Sandy clay	3	7
Sand	10	17
Clay	2	19
Sand and gravel	19	38
Hardpan	2	40
Gravel	9	49
White clay	15	64

Installation: Centrifugal pump; motor-20-hp.

Pumping test

Date: 1939. Static level: 29.5 feet.
 Drawdown: 18 feet.
 Yield: 730 gpm.
 Specific capacity: 40.6

Production: 446,400 gpd., operating 12 hours/day at 620 gpm.
Water level: 29.5 feet below land surface August 20, 1939.

.

85 (a), Aluminum Co. of America, Logans Ferry. Drilled in
1939 by Layne-New York Co., Inc. Usage: General.

Surface elevation: 760 feet. Top of casing 10 feet above land surface.
Diameter of casing: 38 to 18 inches to depth of 28 feet. 10 feet of
screen at bottom.
Depth: 38.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Clay	3	3
Sandy clay	5	8
Sand and gravel	30	38

Installation: Centrifugal pump; motor-20-hp.

Pumping test

Date: 1939. Static level: 18 feet.
 Drawdown: 5 feet.
 Yield: 323 gpm.
 Specific capacity: 64.6.

Production: 432,000 gpd., operating 24 hours/day at 300 gpm.
Water level: 18.0 feet below land surface June 24, 1944.

Records of wells in the valley alluvium of Allegheny County

85 (b), Aluminum Co. of America, Logans Ferry. Drilled in 1939 by Layne-New York Co., Inc. Usage: General.

Surface elevation: 755 feet. Top of casing 10 feet above land surface. Diameter of casing: 24 to 12 inches to depth of 53.5 feet. 10 feet of screen at bottom.

Depth: 62.5 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	5	5
Sand and gravel	40	45
Gravel and slate.	8	53
Gravel and sand	9.5	62.5

Installation: Centrifugal pump; motor-40-hp.

Pumping test

Date: 1939.	Static level:	18.33 feet.
	Drawdown:	44 feet.
	Yield:	408 gpm.
	Specific capacity:	9.3.

Production: 576,000 gpd., operating 24 hours/day at 400 gpm.

Water level: 18.3 feet below land surface July 8, 1944.

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86 (a), Tarentum Products Corp., Tarentum. Drilled in 1946 by Layne-New York Co., Inc. Usage: Cooling.

Surface elevation: 755 feet. Top of casing 2 feet above land surface. Diameter of casing: 24 to 18 inches to depth of 53.75 feet. 15 feet of screen at bottom.

Depth: 70.5 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	24	24
Gravel, soft dark clay	6	30
Medium gravel and sand, some clay	8	38
Medium flat gravel and brown sand	22	60
Medium gravel and coarse gray sand	8	68
Medium and coarse gravel, sand	2.5	70.5

Installation: Turbine pump; motor-75-hp.

Pumping test

Date: 1946.	Static level:	16 feet.
	Drawdown:	30 feet.
	Yield:	1,000 gpm.
	Specific capacity:	33.3

Records of wells in the valley alluvium of Allegheny County

86 (a), (Continued).

Production: 720,000 gpd., operating 24 hours/day at 500 gpm.
Water level: 16.0 feet below land surface, October 31, 1946.

86 (b), Tarentum Products Corp., Tarentum. Drilled in 1946.
by Layne-New York Co., Inc. Usage: Cooling.

Surface elevation: 755 feet. Top of casing 2 feet above land surface.
Diameter of casing: 24 to 18 inches to depth of 53.75. 15 feet of
screen at bottom.
Depth: 71.5 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	8	8
Brown clay and fine gravel.	3	11
Medium gravel and brown sand.	22	33
Medium gravel and brown sand, clay.	10	43
Fine and medium gravel, coarse gray sand.	7	50
Medium and coarse gravel, gray sand	14	64
Medium blue gravel, gray sand	8	72

Installation: Turbine pump; motor-40-hp.

Pumping test

Date: 1946. Static level: 19.17 feet.
 Drawdown: 26.7 feet.
 Yield: 960 gpm.
 Specific capacity: 36.

Production: 720,000 gpd., operating 24 hours/day at 500 gpm.
Water level: 19.17 feet below land surface, November 30, 1946.

87 (a), Pittsburgh Plate Glass Co., Duplate Division, Creighton,
Drilled in 1941 by Layne-New York Co., Inc. Usage: Air conditioning,
condensers.

Surface elevation: 755 feet.
Diameter of casing: 44 to 18 inches to depth of 49.75 feet. 20 feet
of screen at bottom.
Depth: 70.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	17	17
Yellow clay	7	24
Brown sand and gravel	21	45
Blue sand and gravel.	25	70

Records of wells in the valley alluvium of Allegheny County

87 (a), (Continued).

Installation: Turbine pump; capacity, 1,000 gpm.; motor-60-hp.

Pumping test

Date: 1941.

Static level: 27 feet.

Drawdown: 21 feet.

Yield: 840 gpm.

Specific capacity: 40.

Production: 210,000 gpd., operating 14 hours/day at 250 gpm.

Temperature: 58° F.

Water level: 27.0 feet below land surface, February 26, 1941.

.....

87 (b), Pittsburgh Plate Glass Co., Duplate Division, Creighton. Drilled in 1944 by Ohio Drilling Co. Usage: Air conditioning, condensers.

Surface elevation: 755 feet.

Diameter of casing: 36 to 18 inches to depth of 50 feet. 20 feet of bronze screen at bottom.

Depth: 72.5 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	15	15
Sand and clay	14	29
Fine sand and gravel.	4	33
Sand and clay	5	38
Sand, gravel, and clay.	20	58
Sand and gravel	4	62
Sand, gravel, and clay.	10.5	72.5

Installation: Turbine pump; capacity, 1,000 gpm.; motor-75-hp.

Pumping test

Date: 1944.

Static level: 30 feet.

Drawdown: 20 feet.

Yield: 700 gpm.

Specific capacity: 35.

Production: 288,000 gpd., operating 16 hours/day at 300 gpm.

Temperature: 58° F.

Water level: 30.0 feet below land surface, May 25, 1944.

.....

87 (c), Pittsburgh Plate Glass Co., Duplate Division, Creighton. Drilled in 1947 by Ohio Drilling Co. Usage: Air conditioning, condensers.

Surface elevation: 755 feet.

Diameter of casing: 36 to 18 inches to depth of 53 feet. 20 feet of bronze screen at bottom.

Depth: 73.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

87 (c), (Continued).

Installation: Turbine pump; capacity, 1,000 gpm.; motor-75-hp.

Pumping test

Date: 1947.

Static level: 28 feet.

Drawdown: 33 feet.

Yield: 1,175 gpm.

Specific capacity: 35.6.

Production: 480,000 gpd., operating 16 hours/day at 500 gpm.

Temperature: 58° F.

Water level: 20.0 feet below land surface May 29, 1947.

.....
88, West Penn Power Co., Springdale. Drilled in 1927 by West Penn Power Co. Usage: Cooling.

Surface elevation: 756 feet.

Type well: Dug.

Diameter of well: 15 feet.

Depth: 68 feet below land surface.

Installation: Centrifugal pump; capacity, 1,500 gpm.

Drawdown: 3 feet at 1,200 gpm.

Specific capacity: 400.

Production: 1,728,000 gpd., operating 24 hours/day at 1,200 gpm.

Temperature: 65° F.

Water level: 50 feet below land surface in 1947.

.....
89 (a), Springdale Borough, Colfax and Railroad Sts., Springdale. Drilled in 1921. Usage: Municipal supply.

Surface elevation: 755 feet.

Diameter of casing: 10 inches.

Depth: 64.0 feet below land surface.

Installation: Turbine pump; capacity, 450 gpm.; motor-15-hp.

Production: 108,000 gpd., operating 4 hours/day at 450 gpm.

Temperature: 54° F.

Water level: 21 feet below land surface in 1921.

.....
89 (b), Springdale Borough, Colfax and Railroad Sts. Springdale. Drilled in 1925. Usage: Municipal supply.

Surface elevation: 753 feet.

Diameter of casing: 12 inches. 25 feet of screen at bottom.

Depth: 66.5 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

89 (b), (Continued).

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Soil	3	3
Brown sand, little gravel	37	40
Fairly clean gravel	14	54
Sand and gravel	9	63
Yellow clay, sand, and gravel	1.5	64.5
Shale	2	66.5

Installation: Centrifugal pump; capacity, 350 gpm.; motor-10-hp.
Drawdown: 3 feet at 340 gpm.
Specific capacity: 113.

Production: Operates at 260 gpm. Emergency use only.
Temperature: 54° F.
Water level: 30.0 feet below land surface October, 1925.

.
89 (c), Springdale Borough, Colfax and Railroad Sts., Springdale. Drilled
in 1945 by Robert Keaton. Usage: Municipal supply.

Surface elevation: 755 feet.
Diameter of casing: 12 inches.
Depth: 60.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Yellow clay.	28	28
Clay, gravel and sand	9	37
Fine sand and clay	4	41
Coarse gravel	6	47
Boulder gravel	7	54
Fine sand and clay	6	60

<u>Chemical analysis</u> - October 14, 1945		
	<u>Results in parts per million</u>	
Iron (Fe).	0.1	
Aluminum (Al).	0.2	
Manganese (Mn)	0.8	
Sodium and Potasium (Na and K)	8.1	
Silica (SiO ₂).	6.1	
Alkalinity	56	(as CaCO ₃)
Hardness	152	(as CaCO ₃)
Chloride (Cl).	26.0	
Sulfate (SO ₄).	138.3	
Nitrite (NO ₂).	0.0	
Nitrate (NO ₃).	0.004	
pH	5.8	

Records of wells in the valley alluvium of Allegheny County

89 (c), (Continued).

Installation: Turbine pump; capacity, 450 gpm.; motor-15-hp.
Production: 108,000 gpd., operating 4 hours/day at 450 gpm.
Water level: 19.0 feet below land surface in August, 1945.
Temperature: 61° F.

.....

90 (a), Duquesne Light Co., Colfax Power Station, Springdale.
Dug in 1919 by D. P. Robinson. Usage: Cooling.

Surface elevation: 754 feet. Top of well 28.5 feet below land surface.
Type well: Dug.
Size: Rectangular - 5 feet x 8½ feet; concrete lined.
Depth: 53.5 feet below land surface.

<u>Chemical analysis</u> - February, 1938	
	<u>Results in parts per million</u>
Bicarbonate (HCO ₃)	133.0
Sulfate (SO ₄)	202.0
Nitrate (NO ₃)	0.4
Alkalinity	109.0
Hardness	148.0
Total solids	501.0
Chloride (Cl)	35.0
Iron oxide (Fe ₂ O ₃)	6.0
pH	7.0

Installation: 2 centrifugal pumps; capacity, 750 gpm. each; motor-75-hp each.
Production: Operates at 850 gpm. Emergency use only.
Temperature: 52° F.
Water level: 46.5 feet below land surface in 1926.

.....

90 (b), Duquesne Light Co., Colfax Power Station, Springdale. Dug
in 1926 by D. P. Robinson. Usage: Cooling, sanitation.

Surface elevation: 754 feet.
Type well: Dug.
Diameter of well: 24 feet; concrete lined.
Depth: 61.0 feet below land surface.

<u>Chemical analysis</u> - July, 1946	
	<u>Results in parts per million</u>
Dissolved solids	362.0
Hardness	200.0
Iron oxide (Fe ₂ O ₃)	0.4
Manganese (Mn)	1.4
pH	7.18

Records of wells in the valley alluvium of Allegheny County

90 (b), (Continued).

Installation: 2 centrifugal pumps; capacity, 6,000 gpm. each; motors-150-hp each

Pumping test

Duration: 16 minutes.
Drawdown: 24 feet.
Yield: 8,880 gpm.
Specific capacity: 370.

Production: 4,723,200 gpd., operating 24 hours/day at 3,280 gpm.

Temperature: 52° F.

Water level: 17.9 feet below land surface January 17, 1941.

.....
91 (a), Cheswick Borough, Cheswick. Drilled in 1925 by Mr. Hall. Usage:
Municipal supply.

Surface elevation: 750 feet.

Diameter of casing: 10 inches.

Depth: 60.0 feet below land surface.

Installation: Turbine pump; capacity, 100 gpm.; motor-5-hp.

Drawdown: 2 feet at 800 gpm.

Production: 42,000 gpd., operating 7 hours/day at 100 gpm.

Temperature: 50° F.

Water level: 30 feet below land surface in August, 1946.

.....
91 (b), Cheswick Borough, Cheswick. Drilled in 1945 by Robert Keaton.
Usage: Municipal supply.

Surface elevation: 750 feet.

Diameter of casing: 12 inches to depth of 48 feet. 12 feet of strainer at
bottom.

Depth: 60.0 feet below land surface.

Installation: Turbine pump; capacity, 200 gpm.; motor-20-hp.

Production: 36,000 gpd., operating 3 hours/day at 200 gpm.

Temperature: 50° F.

Water level: 30 feet below land surface in August, 1946.

92, Harmar Water Co., Acmetonia. Drilled in 1945 by Pennsylvania
Drilling Co. Usage: Municipal supply.

Surface elevation: 740 feet.

Diameter of casing: 12 inches to depth of 51 feet. 15 feet of strainer at
bottom.

Depth: 66.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

92, (Continued).

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Yellow sandy clay	7	7
Yellow sand	15	22
Brown sand	10	32
Fine gravel and sand	33	65
Shale	1	66

Chemical analysis - May 23, 1945

	<u>Results in parts per million</u>
Calcium (Ca).	41.8
Magnesium (Mg).	12.7
Iron (Fe)	0.0
Aluminum (Al)	1.6
Sodium and Potassium (Na and K)	12.5
Manganese (Mn).	0.0
Silica (SiO ₂)	4.7
Bicarbonate (HCO ₃)	56.0
Chloride (Cl)	20.0
Sulfate (SO ₄)	78.0
Nitrite (NO ₂)	0.0
Nitrate (NO ₃)	0.1
pH.	6.9
Hardness (CaCO ₃)	166.0
Total solids.	232.5

Pumping test

Date: 1945. Duration: 24 hours.
 Static level: 31 feet.
 Drawdown: 5 feet.
 Yield: 425 gpm.
 Specific capacity: 85.

Production: 36,000 gpd., operating 3 hours/day at 200 gpm.
Temperature: 50° F.
Water level: 31.0 feet below land surface in May, 1945.

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93 (a), Cemline Corp., Freeport Rd., Harmarville. Drilled in 1936.
Usage: Testing tanks.

Surface elevation: 740 feet.
Diameter of casing: 4 inches.
Depth: 80 feet below land surface.

Installation: Suction pump; motor-3/4-hp.
Production: 5,400 gpd., operating 10 hours/day at 9 gpm.
Water level: 15 feet below land surface in 1946.

Records of wells in the valley alluvium of Allegheny County

93 (b), Cemline Corp., Freeport Rd., Harmarville. Drilled in 1940.
Usage: Testing tanks.

Surface elevation: 740 feet.
Diameter of casing: 8 inches.
Depth: 80 feet.

Installation: Suction pump; motor-3/4-hp.
Production: 5,400 gpd., operating 10 hours/day at 9 gpm.
Water level: 15 feet below land surface in 1946.

.....
93 (c), Cemline Corp., Freeport Rd., Harmarville. Drilled in 1946 by
Robert Keaton. Usage: Testing tanks.

Surface elevation: 740 feet.
Diameter of casing: 8 inches.
Depth: 80 feet below land surface.

Installation: Suction pump; motor-3/4-hp.
Production: Operates at 9 gpm. Emergency use only.
Water level: 15 feet below land surface in 1946.

.....
94, Consumer's Mining Co., Harmarville. Drilled in 1919 by Robert
Keaton. Usage: Drinking, general.

Surface elevation: 722 feet.
Type wells: Four drilled wells connected to one pump.
Diameter of casing: 12 inches.
Depth: 52 feet below land surface.

Installation: Centrifugal pump; capacity, 500 gpm.; motor-50-hp.

Pumping test

Duration:	1½ hours.
Drawdown:	5 feet.
Yield:	500 gpm.
Specific capacity:	100.

Production: Total of 90,000 gpd. from four wells, operating 4 hours/day at 375 g
Water level: 20 feet below land surface in 1947.

.....
95, Oakmont Water Authority, Harmarville. Drilled in 1918.
Usage: Auxiliary municipal supply.

Records of wells in the valley alluvium of Allegheny County

95, (Continued).

Surface elevation: 730 feet.

Type wells: Three drilled wells connected to one pump.

Diameter of casing: 8 inches.

Depth: 70 feet below land surface.

Chemical analysis - January 29, 1947

	<u>Results in parts per million</u>
Iron (Fe).	0.70
Manganese (Mn)	0.66
Alkalinity	168
Chloride (Cl).	26.0
Hardness (soap).	236.0
pH	7.4

Installation: Two triplex plunger pumps; motor-100-hp.

Production: Operates at 390 gpm. from three wells. Emergency use only.

Temperature: 54° F.

Water level: 20 feet below land surface in 1947.

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96, Allegheny County Work House, Blawnox. Drilled in 1927.

Usage: General.

Surface elevation: 729.4 feet.

Diameter of casing: 8 inches.

Depth: 58 feet below land surface.

Chemical analysis - January, 1944

	<u>Results in parts per million</u>
Chloride (Cl).	35.9
Sulfate (SO ₄).	51.3
Total alkalinity	140.2
Temporary hardness	140.2
Permanent hardness	30.8
Suspended solids	trace
Iron (Fe).	trace
pH	7.3

Installation: Centrifugal pump; motor-40-hp.

Production: 234,000 gpd., operating 13 hours/day at 300 gpm.

Temperature: 50° F.

Water level: 15 feet below land surface in 1927.

Records of wells in the valley alluvium of Allegheny County

97, John F. Casey Co., Aspinwall, Drilled in 1925 by John F. Casey Co.
Usage: Drinking, general.

Surface elevation: 740 feet.
Diameter of casing: 5 inches.
Depth: 85 feet below land surface.

Installation: Plunger pump.
Production: 18,000 gpd., operating 6 hours/day at 50 gpm.
Water level: 30 feet below land surface, 1947.

98 (a), Aspinwall Borough, 210 River Ave., Aspinwall. Drilled in 1938 by
Layne-New York, Inc. Usage: Municipal supply.

Surface elevation: 735 feet. Top of casing 11 feet above land surface.
Diameter of casing: 18 to 12 inches to depth of 41 feet. 21.75 feet of screen
at bottom.
Depth: 62.75 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Pit	12.75	12.75
Coarse gravel and sand	16.0	28.75
Sandrock	0.5	29.25
Coarse gravel and sand	32.5	61.75
Boulders	1.0	62.75

<u>Chemical analysis</u> - July 11, 1944	
	<u>Results in parts per million</u>
Iron (Fe)	0.0
Manganese (Mn)	0.0
Magnesium oxide (MgO)	14.0
Silica (SiO ₂)	6.0
Calcium oxide (CaO)	76.1
Chloride (Cl)	21.0
Nitrate (NO ₃)	0.9
Sulfate (SO ₄)	67.0
pH	7.0
Alkalinity	74.0
Temporary hardness	74.0
Permanent hardness	71.0
Total hardness	145.0
Total solids	368.0

Installation: Turbine pump; capacity, 500 gpm.; motor-15-hp.

Pumping test:

Date: 1938	Static level: 15 feet.
	Drawdown: 10 feet.
	Yield: 460 gpm.
	Specific capacity: 46.

Records of wells in the valley alluvium of Allegheny County

98 (a), (Continued).

Production: Operating at 460 gpm. Emergency use only.
Temperature: 54° F.
Water level: 18.0 feet below land surface August 1, 1938.

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98 (b), Aspinwall Borough, 210 River Ave., Aspinwall. Drilled in 1944 by Layne-New York, Inc. Usage: Municipal supply.

Surface elevation: 735 feet. Top of casing 12.75 feet below land surface.
Diameter of casing: 18 to 12 inches to depth of 50 feet. 15 feet of screen at bottom.
Depth: 65.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Pit.	12.75	12.75
Coarse gravel, sand, boulders.	10.0	22.75
Coarse gravel, sand, some clay	8.0	30.75
Coarse gravel and sand	34.25	65.00

Installation: Turbine pump; capacity, 500 gpm.; motor-15-hp.

Pumping test

Date: 1944.	Static level:	17.5 feet.
	Drawdown:	8 feet.
	Yield:	460 gpm.
	Specific capacity:	57.5

Production: 378,000 gpd., operating 14 hours/day at 450 gpm.
Temperature: 54° F.
Water level: 17.5 feet below land surface, July 11, 1944.

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99 (a - d), Sharpsburg Borough, 20th St., Sharpsburg. Drilled in 1919 by Mr. McNeill, (4 wells). Usage: Municipal supply.

Surface elevation: 717 feet.
Diameter of casing: 6 inches.
Depth: 47 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

99 (a - d), (Continued).

Chemical analysis - July 4, 5, 1940

	<u>Results in parts per million</u>		
	<u>Well 4</u>	<u>Well 5</u>	<u>Well 6 and 7</u>
Alkalinity.	84.2	64.6	76.6
Permanent hardness.	129	108	117
Temporary hardness.	23	4	32
Total hardness.	152	112	149
Dissolved solids.	332	228	296
Loss on ignition.	66	64	66
Iron (Fe)	0.4	1.0	0.1
Manganese (Mn).	1.0	1.4	0.26
Chloride (Cl)	11.5	3.5	4.5
pH.	6.9	7.1	7.1

Installation: Connected to 2 alternate pumps of 1,500 and 2,100 gpm. capacity.

Production: Operates when needed in borough system.

Remarks: Well No. 4 used for condensers only.

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99 (e - i), Sharpsburg Borough, 20th St., Sharpsburg. Drilled in 1931 by Allen Drilling Co., (5 wells). Usage: Municipal supply.

Surface elevation: 730 feet.

Diameter of casing: 12 inches.

Depth: 60 feet below land surface.

Chemical analysis - July 4, 5, 1940

	<u>Results in parts per million</u>
	<u>Well 1</u>
Alkalinity.	55.4
Permanent hardness.	103
Temporary hardness.	8
Total hardness.	111
Dissolved solids.	250
Loss on ignition.	49
Iron (Fe)	2.2
Manganese (Mn).	1.9
Chloride (Cl)	5.5
pH.	6.9

Installation: Connected to 2 alternate pumps of 1,500 and 2,100 gpm. capacity.

Production: Operates when needed in borough system.

Remarks: Well 1 not in use at present.

Records of wells in the valley alluvium of Allegheny County

99 (j - m), Sharpsburg Borough, 20th St., Sharpsburg. Drilled in 1940 by Robert Keaton, (4 wells). Usage: Municipal supply.

Surface elevation: 736 feet.
Diameter of casing: 12 inches.
Depth: 66 feet below land surface.

Installation: Connected to 2 alternate pumps of 1,500 and 2,100 gpm capacity.
Production: Operates when needed. Total borough pumpage is 2,600,000 gpd.
Remarks: Well 12 tested at 950 gpm. with 16 foot drawdown.
Well 13 tested at 1,070 gpm. with 14.5 foot drawdown.

100 (a), Fort Pitt Brewing Co., 16th St., Sharpsburg. Drilled in 1934 by Pennsylvania Drilling Co. Usage: Brewing, washing.

Surface elevation: 718.5 feet. Top of casing 20 feet above land surface.
Diameter of casing: 26 inches.
Depth: 48.0 feet below land surface.

Installation: Turbine pump; capacity, 350 gpm.
Production: 432,000 gpd., operating 24 hours/day at 300 gpm., in summer only.
Water level: 28.0 feet below land surface October, 1934.

100 (b), Fort Pitt Brewing Co., 16th St., Sharpsburg. Drilled in 1941 by Layne-New York, Inc. Usage: Brewing, washing.

Surface elevation: 732 feet. Top of casing 10 feet above land surface.
Diameter of casing: 24 to 16 inches to depth of 50 feet. 10 feet of screen at bottom.
Depth: 60.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	8	8
Clay.	15	23
Gravel and sand	37	60

Installation: Turbine pump; capacity, 450 gpm.; motor-25-hp.

Pumping test

Date: 1941.
Static level: 21 feet.
Drawdown: 10.75 feet.
Yield: 425 gpm.
Specific capacity: 39.5.

Production: 384,000 gpd., operating 16 hours/day at 400 gpm.
Water level: 21.0 feet below land surface, July 7, 1942.

Records of wells in the valley alluvium of Allegheny County

100 (c), Fort Pitt Brewing Co., 16th St., Sharpsburg. Drilled in 1945 by Layne-New York, Inc. Usage: Brewing, washing.

Surface elevation: 732 feet. Top of casing 10.5 feet above land surface.
Diameter of casing: 24 to 18 inches to depth of 49.5 feet. 10 feet of screen at bottom.
Depth: 60.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	9	9
Yellow clay and gravel.	14	23
Gravel and brown sand	37	60

<u>Chemical analysis</u> - July 23, 1945	
	<u>Results in parts per million</u>
Iron (Fe).	0.15
Calcium (Ca)	92.0
Magnesium (Mg)	8.0
Manganese (Mn)	0.01
Silica (SiO ₂)	10
Hardness	265

Installation: Turbine pump; capacity, 450 gpm.; motor-25-hp.

<u>Pumping test</u>	
Date: 1945.	Static level: 19.5 feet.
	Drawdown: 7 feet.
	Yield: 450 gpm.
	Specific capacity: 64.3.

Production: 576,000 gpd., operating 24 hours/day at 400 gpm.
Water level: 19.5 feet below land surface, Feb. 8, 1946.

.....

101 (a), Etna Borough, Etna. Drilled in 1938 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 735 feet.
Diameter of casing: 18 inches.
Depth: 79.0 feet below land surface.

Installation: Centrifugal pump.
Production: 504,000 gpd., operating 24 hours/day at 350 gpm.
Temperature: 54° F.
Water level: 25 feet below land surface, 1939.

Records of wells in the valley alluvium of Allegheny County

101 (b), Etna Borough, Etna. Drilled in 1938 by Ohio Drilling Co.
Usage: Municipal supply.

Surface elevation: 722.67 feet.
Diameter of casing: 12 inches.
Depth: 56.5 feet below land surface.

Chemical analysis - January 14, 1938

Results in parts per million

Silica (SiO ₂)	5.4
Iron (Fe)	0.1
Aluminum (Al)	0.5
Manganese (Mn)	0.4
Calcium (Ca)	34.0
Magnesium (Mg)	7.8
Chloride (Cl)	16.0
Sulfate (SO ₄)	74.6
Nitrite (NO ₂)	0.001
Nitrate (NO ₃)	0.1
pH	7.4
Alkalinity	45.0
Temporary hardness	45.0
Permanent hardness	72.0
Total solids	216.0

Installation: Centrifugal pump; motor-15-hp.

Pumping test

Date: 1938.	Duration:	10 minutes.
	Static level:	12 feet.
	Drawdown:	10 feet.
	Yield:	549 gpm.
	Specific capacity:	54.9.

Production: 528,000 gpd., operating 16 hours/day at 550 gpm.
Temperature: 54° F.
Water level: 12.0 feet below land surface, Jan. 11, 1939.

.

101 (c), Etna Borough, Etna. Drilled in 1938 by Ohio Drilling Co.,
Usage: Municipal supply.

Surface elevation: 729.67 feet.
Diameter of casing: 12 inches.
Depth: 64.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

101 (c), (Continued).

Chemical analysis - February 18, 1938

Results in parts per million

Silica (SiO ₂)	5.2
Iron (Fe)	0.1
Aluminum (Al)	0.4
Manganese (Mn)	0.3
Calcium (Ca)	34.9
Magnesium (Mg)	7.5
Chloride (Cl)	16.0
Sulfate (SO ₄)	73.6
Nitrite (NO ₂)	0.001
Nitrate (NO ₃)	0.1
pH	7.4
Alkalinity	44.0
Temporary hardness	44.0
Permanent hardness	74.0
Total solids	210.0

Installation: Centrifugal pump; motor-20-hp.

Pumping test

Date: 1938.

Duration: 8 minutes.
Static level: 18 feet.
Drawdown: 13.3 feet.
Yield: 982 gpm.

Production: 672,000 gpd., operating 16 hours/day at 700 gpm.

Temperature: 54^o F.

Water level: 18.0 feet below land surface, Jan. 11, 1939.

.
102 (a), Shaler Township Water Co., East Ohio St., Shaler Township.
Drilled in 1939 by Ohio Drilling Co. Usage: Municipal supply.

Surface elevation: 730 feet.

Diameter of casing: 12 inches to depth of 59 feet. 13 feet of screen
at bottom.

Depth: 72.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u>	<u>Depth</u>
Slag and cinder fill.	25	25
Sandy clay.	11.5	36.5
Sand and gravel, some clay.	3.5	40
Soft clay, few gravel	5	45
Soft clay	5	50
Tough clay.	6	56
Gravel, little sand	9	65
Sand and gravel, clay	6.5	71.5

Records of wells in the valley alluvium of Allegheny County

102 (a), (Continued).

Chemical analysis - February 27, 1940
Results in parts per million

Iron (Fe).	8.4
Manganese (Mn)	1.2
Chloride (Cl).	54.0
Silica (SiO ₂).	14.0
Iron oxide (Fe ₂ O ₃)	11.9
Aluminum oxide (Al ₂ O ₃)	3.9
Calcium oxide (CaO).	142.6
Magnesium oxide (MgO).	35.1
Sulfate (SO ₄).	98.5
Alkalinity	253
Total hardness	342
Total solids	548
pH	7.0

Installation: Turbine pump; capacity, 350 gpm.

Pumping test

Date: 1939. Drawdown: 7 feet.
 Yield: 600 gpm.
 Specific capacity: 85.7.

Production: Operates when needed at 350 gpm. Total borough pumpage is 550,000 gpd.

Water level: 20 feet below land surface, 1947.

.....

102 (b), Shaler Township Water Co., East Ohio St., Shaler Township. Drilled in 1939 by Ohio Drilling Co. Usage: Municipal supply.

Surface elevation: 730 feet.

Diameter of casing: 12 inches to depth of 61 feet. 13 feet of screen at bottom.

Depth: 74.0 feet below land surface.

Installation: Turbine pump; capacity, 250 gpm.

Pumping test

Date: 1939. Drawdown: 17 feet.
 Yield: 500 gpm.
 Specific capacity: 29.4.

Production: Operates when needed at 250 gpm. Total borough pumpage is 550,000 gpd.

Water level: 20 feet below land surface, 1947.

Records of wells in the valley alluvium of Allegheny County

102 (c), Shaler Township Water Co., East Ohio St., Shaler Township.
Drilled in 1947 by Pennsylvania Drilling Co. Usage: Municipal supply.

Surface elevation: 720 feet.

Diameter of casing: 13 inches to depth of 45.5 feet. 14.5 feet of
screen at bottom.

Depth: 60.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill and gray slag	17	17
Ashes, gravel, little clay	5	22
Sand, gravel, little clay.	7	29
Fine gray sand and gravel.	29	58
Clay and gravel.	1	59
Clay, shale and gravel	1	60

Installation: Turbine pump; capacity, 500 gpm.; motor-20-hp.

Pumping test

Date: 1947.	Duration:	48 hours.
	Drawdown:	6 feet.
	Yield:	557 gpm.
	Specific capacity:	92.8.

Production: Operates when needed at 500 gpm.

Water level: 9.33 feet below land surface, May 1, 1947.

.....

103 (a), Pittsburgh Melting Co., Herrs Island (north end),
Pittsburgh. Drilled in 1910. Usage: General.

Surface elevation: 730 feet.

Diameter of casing: 6 inches.

Depth: 80 feet below land surface.

Installation: Steam-driven plunger pump.

Production: Operates at 200 gpm. Emergency use only.

Water level: 27 feet below land surface, 1946.

103 (b), Pittsburgh Melting Co., Herrs Island (north end), Pittsburgh.
Drilled in 1946 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 730 feet.

Diameter of casing: 12 inches.

Depth: 57 feet below land surface.

Installation: Centrifugal pump.

Production: 720,000 gpd., operating 24 hours/day at 500 gpm.

Temperature: 50° F.

Water level: 27 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

104 (a), Pittsburgh Provision & Packing Co., Herrs Island (south end), Pittsburgh. Dug in 1912 by Pheele and Miller. Usage: Drinking.

Surface elevation: 732 feet.
Type well: Dug.
Diameter of well: 16 feet.
Depth: 50 feet below land surface.

Installation: Centrifugal pump.
Production: 1,152,000 gpd., operating 24 hours/day at 800 gpm.
Temperature: 55° F.
Water level: 22 feet below land surface, 1937.

.....
104 (b), Pittsburgh Provision & Packing Co., Herrs Island (south end), Pittsburgh. Drilled in 1937 by Layne-New York, Inc. Usage: Cooling condensers.

Surface elevation: 732 feet. Top of casing 13.25 feet above land surface.
Diameter of casing: 24 to 16 inches to depth of 38 feet. 30 feet of screen at bottom.
Depth: 68.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill	20	20
River mud	5	25
Red sand	5	30
Coarse sand, gravel, boulders	38	68

Installation: Centrifugal pump; motor-40-hp.

Pumping test

Date: 1937.	Static level:	19.75 feet.
	Drawdown:	12 feet.
	Yield:	1,084 gpm.
	Specific capacity:	90.3.

Production: 1,152,000 gpd., operating 24 hours/day at 800 gpm.
Temperature: 55° F.
Water level: 19.75 feet below land surface, Aug. 13, 1937.

.....
104 (c), Pittsburgh Provision & Packing Co., Herrs Island (south end), Pittsburgh. Drilled in 1945 by Layne-New York, Inc. Usage: Drinking.

Surface elevation: 732 feet. Top of casing 12 feet above land surface.
Diameter of casing: 24 to 18 inches to depth of 56 feet. 15 feet of screen at bottom.
Depth: 71.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

104 (c), (Continued).

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	16	16
Sandy yellow clay	15	31
Medium and fine sand and gravel	40	71

Installation: Turbine pump; motor-50-hp.

Pumping test

Date: September 4, 1945.	Static level:	25 feet.
	Drawdown:	10 feet.
	Yield:	800 gpm.
	Specific capacity:	80.

Production: 384,000 gpd., operating 8 hours/day at 800 gpm.
Temperature: 55° F.
Water level: 25 feet below land surface, Sept. 4, 1945.

.
105, Standard Ice Co., 1362 River Ave., Pittsburgh. Drilled in 1925 by Allen Drilling Co. Usage: Cooling.

Surface elevation: 707 feet. Top of casing 3 feet below river level.
Type wells: Three drilled wells pumped as a unit.
Diameter of casing: 12 inches.
Depth: 40 feet below land surface.

Installation: Centrifugal pump; motor-10-hp.
Production: 504,000 gpd., operating 24 hours/day at 350 gpm.
Temperature: 50° F.

.
106, McGraw Wool Co., 1232 River Ave., Pittsburgh. Drilled in 1934.
Usage: In boilers.

Surface elevation: 707 feet. Top of casing 3 feet below river level.
Type wells: Nine drilled wells pumped as a unit.
Diameter of casing: 12 inches.
Depth: 50 feet below land surface.

Installation: Centrifugal pump; motor-50-hp.
Production: 972,000 gpd., operating 18 hours/day at 900 gpm.
Temperature: 60° F.

Records of wells in the valley alluvium of Allegheny County

107, Pittsburgh Wool Co., Pindham and Progress Sts., Pittsburgh.
Drilled in 1920 by Allen Drilling Co. Usage: Washing hides.

Surface elevation: 730 feet.
Diameter of casing: 10 inches.
Depth: 80 feet below land surface.

Installation: Plunger pump.
Production: 2,700 gpd., operating 3 hours/day at 15 gpm.
Water level: 25 feet below land surface, 1946.

.....
108 (a), H. J. Heniz Co., 1062 Progress St., Pittsburgh. Drilled
in 1923 by Layne-New York, Inc. Usage: Cooling.

Surface elevation: 725 feet.
Diameter of casing: 38 to 24 inches to depth of 33.5 feet. 20 feet of
screen at bottom.
Depth: 57.5 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	2	2
Soft clay	20	22
Fine sand	1	23
Sand and gravel	10	33
Boulders and gravel	2	35
Gravel.	5	40
Boulders and clay	14	54
Coarse gravel	3.5	57.5

Chemical analysis - March 10, 1933

Results in parts per million

Silica (SiO ₂).	9.6
Iron oxide (Fe ₂ O ₃)	0.57
Aluminum oxide (Al ₂ O ₃)	1.83
Calcium carbonate (CaCO ₃).	77.0
Magnesium carbonate (MgCO ₃).	70.2
Calcium sulfate (CaSO ₄).	98.0
Sodium chloride (NaCl) ⁴	134.0
Calcium chloride (CaCl ₂)	14.0

Installation: Turbine pump; motor-15-hp.

Production: 480,000 gpd., operating 20 hours/day at 400 gpm.
Temperature: 60° F.
Water level: 36 feet below land surface, 1931.

Records of wells in the valley alluvium of Allegheny County

108 (b), H. J. Heinz Co., 1062 Progress St., Pittsburgh. Drilled in 1923 by Layne-New York, Inc. Usage: Cooling.

Surface elevation: 725 feet. Top of casing 2 feet above land surface. Diameter of casing: 24 inches to depth of 37 feet. 15 feet of screen at bottom.

Depth: 56.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Old pump pit.	45	45
Coarse gravel and boulders.	11	56

Chemical analysis - March 10, 1933

	<u>Results in parts per million</u>
Silica (SiO ₂).	9.6
Iron oxide (Fe ₂ O ₃)	0.17
Aluminum oxide (Al ₂ O ₃)	9.43
Calcium carbonate (CaCO ₃)	82.0
Magnesium carbonate (MgCO ₃)	99.0
Calcium sulfate (CaSO ₄)	128.0
Sodium chloride (NaCl)	168.0
Calcium chloride (CaCl ₂)	8.0

Installation: Turbine pump; motor-15-hp.

Production: 180,000 gpd., operating 20 hours/day at 150 gpm.

Water level: 36 feet below land surface, 1931.

108 (c), H. J. Heinz Co., 1062 Progress St., Pittsburgh. Drilled in 1931 by Allen Drilling Co. Usage: Cooling.

Surface elevation: 725 feet.

Diameter of casing: 12 inches.

Depth: 59 feet below land surface.

Chemical analysis

	<u>Results in parts per million</u> (Mar. 10, 1933)
Silica (SiO ₂)	9.2
Iron oxide (Fe ₂ O ₃)	0.11
Aluminum oxide (Al ₂ O ₃)	4.69
Calcium carbonate (CaCO ₃)	58.0
Magnesium carbonate (MgCO ₃)	63.5
Calcium sulfate (CaSO ₄)	100.0
Sodium chloride (NaCl)	101.0
Calcium chloride (CaCl ₂)	2.0

Installation: Reciprocating pump; motor-10-hp.

Production: 180,000 gpd., operating 20 hours/day at 150 gpm.

Temperature: 60° F.

Water level: 36.0 feet below land surface 1931.

Records of wells in the valley alluvium of Allegheny County

108 (d), H. J. Heinz Co., 1062 Progress St., Pittsburgh. Drilled in 1931 by Allen Drilling Co. Usage: Cooling.

Surface elevation: 730 feet.
Diameter of casing: 10 inches.
Depth: 76 feet below land surface.

Installation: Turbine pump; motor-5-hp.

Production: 14,400 gpd., operating 8 hours/day at 30 gpm.
Temperature: 60° F.
Water level: 34.5 feet below land surface, 1931.

.....

108 (e), H. J. Heinz Co., 1062 Progress St., Pittsburgh. Drilled in 1931 by Allen Drilling Co. Usage: Cooling.

Surface elevation: 730 feet.
Diameter of casing: 8 inches.
Depth: 76 feet below land surface.

Installation: Turbine pump; motor-10-hp.

Production: 60,000 gpd., operating 10 hours/day at 100 gpm.
Temperature: 60° F.
Water level: 34.5 feet below land surface, 1931

.....

108 (f), H. J. Heinz Co., 1062 Progress St., Pittsburgh. Drilled in 1931 by Allen Drilling Co. Usage: Cooling.

Surface elevation: 730 feet.
Diameter of casing: 8 inches.
Depth: 76 feet below land surface.

Installation: Turbine pump; motor-5-hp.

Production: 18,000 gpd., operating 10 hours/day at 30 gpm.
Temperature: 60° F.
Water level: 34.5 feet below land surface, 1931.

.....

108 (g), H. J. Heniz Co., 1062 Progress St., Pittsburgh. Drilled in 1946. Usage: Cooling.

Surface elevation: 725 feet.
Diameter of casing: 12 inches to depth of 50 feet. 8 feet of screen at bottom.
Depth: 58 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

108 (g), (Continued).

	<u>Chemical analysis</u>
	<u>Results in parts per million</u> (Oct. 5, 1946)
Iron (Fe)	0.25
Manganese (Mn)	2.3
Ammonia (NH ₃)	0.0
Alkalinity	127.5
Total solids	288.0
Ignition loss	18.0
Hydrogen sulfide (H ₂ S)	0.0
Chloride (Cl)	24.5
Nitrate (NO ₃)	0.07

Installation: Turbine pump; motor-25-hp.

Pumping test

Date: 1946.

Static level: 36 feet.
Drawdown: 4.5 feet.
Yield: 405 gpm.
Specific capacity: 90.

Production: 720,000 gpd., operating 15 hours/day at 800 gpm.

Temperature: 60° F.

Water level: 36 feet below land surface, 1931.

.....
109, Armour & Co., 301 Anderson St., Pittsburgh. Drilled in 1928.
Usage: Cooling.

Surface elevation: 732 feet. Top of casing 10 feet below land surface.
Diameter of casing: 8 inches.
Depth: 60 feet below land surface.

Installation: Centrifugal pump.

Production: 28,800 gpd., operating 24 hours/day at 20 gpm.

Water level: 28.75 feet below land surface March 2, 1943.

.....
110, Swift & Co., 309 Anderson St., Pittsburgh. Drilled in 1930 by
Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 732 feet. Top of casing 8 feet below land surface.
Diameter of casing: 12 inches.
Depth: 56 feet below land surface.

Installation: Turbine pump.

Production: 172,800 gpd., operating 24 hours/day at 120 gpm.

Temperature: 60° F.

Water level: 28 feet below land surface, 1943.

Records of wells in the valley alluvium of Allegheny County

111, Pannier Bros. Stamp Co., 207-209 Sandusky St., Pittsburgh.
Drilled in 1906. Usage: Drinking.

Surface elevation: 733 feet. Top of casing 6 feet below land surface.
Diameter of casing: 6 inches.
Depth: 40 feet below land surface.

Installation: Plunger pump.
Production: 10,800 gpm., operating 18 hours/day at 10 gpm.
Water level: 30 feet below land surface, 1943.

.....

112, Beverly Farms Milk Co., 1230 Reedsdale St., Pittsburgh.
Drilled in 1941. Usage: Cooling.

Surface elevation: 725 feet. Top of casing 2 feet below land surface.
Diameter of casing: 10 inches.
Depth: 62 feet below land surface.

Installation: Turbine pump; motor-10-hp.
Production: 48,000 gpd., operating 16 hours/day at 50 gpm.
Temperature: 56° F.
Water level: 25 feet below land surface, 1946.

.....

113, National Casket Co., 1501 Reedsdale, Pittsburgh. Drilled
in 1918. Usage: General.

Surface elevation: 724 feet. Top of casing 3 feet above land surface.
Diameter of casing: 8 inches.
Depth: 68 feet below land surface.

Installation: Turbine pump.
Production: 60,000 gpd., operating 5 hours/day at 200 gpm.
Temperature: 50° F.
Water level: 22 feet below land surface, 1946.

.....

114 (a), United Laundries, Inc., 1409 Sedgwick St., Pittsburgh.
Drilled in 1906. Usage: Drinking.

Surface elevation: 740 feet. Top of casing 5 feet above land surface.
Diameter of casing: 4 inches.
Depth: 70 feet below land surface.

Installation: Steam-driven plunger pump.
Production: 38,400 gpd., operating 16 hours/day at 40 gpm.
Water level: 25 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

114 (b), United Laundries Inc., 1409 Sedgwick St., Pittsburgh. Drilled in 1906. Usage: Drinking.

Surface elevation: 740 feet. Top of casing 5 feet above land surface.
Diameter of casing: 4 inches.
Depth: 70 feet below land surface.

Installation: Steam-driven plunger pump.
Production: Operates at 40 gpm. Emergency use only.
Water level: 25 feet below land surface, 1946.

.....
115, Rosedale Foundry & Machine Co., Columbus and Preble St., Pittsburgh. Drilled in 1910. Usage: Drinking, cooling.

Surface elevation: 728 feet.
Diameter of casing: 6 inches.
Depth: 50 feet below land surface.

Installation: Reciprocating pump.
Production: 50,400 gpd., operating 12 hours/day at 70 gpm.
Water level: 24 feet below land surface, 1910.

.....
116, Fro-Del Ice Cream Co., Columbus and Metropolitan Sts., Pittsburgh. Drilled in 1935 by Allen Drilling Co. Usage: Cooling.

Surface elevation: 732 feet.
Diameter of casing: 8 inches.
Depth: 50 feet below land surface.

Installation: Turbine pump
Production: 180,000 gpd., operating 24 hours/day at 125 gpm.
Temperature: 58° F.
Water level: 30 feet below land surface, 1935.

.....
117, Kelly Bros. Ice Co., 1918 Metropolitan St, Pittsburgh. Drilled in 1936 by Allen Drilling Co. Usage: Cooling.

Surface elevation: 735 feet.
Diameter of casing: 8 inches.
Depth: 104 feet below land surface.

Installation: Plunger pump; motor-1-hp.
Production: 7,200 gpd., operating 24 hours/day at 5 gpm.
Temperature: 47° F.
Water level: 22 feet below land surface, 1936.

Records of wells in the valley alluvium of Allegheny County

118, Duff-Norton Mfg. Co., 2709 Preble Ave., Pittsburgh. Drilled in 1947 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 725 feet.
Diameter of casing: 10 inches.
Depth: 45.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Concrete and fill.	20	20
Sand and gravel.	5	25
Clay, gravel, and sand	10	35
Sand and pea gravel.	5	40
Clay and gravel.	3.5	43.5
Dark shale	1.5	45

Chemical analysis

	<u>Results in parts per million</u> (May 17, 1934)
Calcium carbonate (CaCO_3).	105.0
Magnesium carbonate (MgCO_3).	3.8
Sodium carbonate (Na_2CO_3).	0.0
Calcium sulfate (CaSO_4).	238.0
Magnesium sulfate (MgSO_4).	65.8
Sodium sulfate (Na_2SO_4).	31.7
Calcium chloride (CaCl_2).	0.0
Magnesium chloride (MgCl_2).	0.0
Sodium chloride (NaCl).	190.7
Silica (SiO_2).	10.0
pH	6.5

Installation: Turbine pump.

Pumping test

Date: 1947. Static level: 20.5 feet.
 Drawdown: 5.5 feet.
 Yield: 300 gpm.
 Specific capacity: 54.5.

Production: 72,000 gpd., operating 4 hours/day at 300 gpm.
Temperature: 55° F.
Water level: 20.5 feet below land surface, December 10, 1947

.....

119 (a), Pittsburgh Screw and Bolt Corp., 2719 Preble Ave., Pittsburgh. Drilled in 1942 by Pennsylvania Drilling Co. Usage: Cooling, air-conditioning.

Records of wells in the valley alluvium of Allegheny County

119 (a), (Continued).

Surface elevation: 725 feet.

Diameter of casing: 6 inches to depth of 38.5 feet. 10 feet of screen at bottom.

Depth: 48.5 feet below land surface.

Installation: Turbine pump.

Production: 288,000 gpd., operating 16 hours/day at 300 gpm.

Temperature: 58° F.

Water level: 23 feet below land surface, 1942.

.....

119 (b), Pittsburgh Screw and Bolt Corp., 2719 Preble Ave., Pittsburgh.
Drilled in 1945 by Pennsylvania Drilling Co. Usage: Cooling, air conditioning.

Surface elevation: 725 feet.

Diameter of casing: 6 inches to depth of 39.5 feet. 10 feet of screen at bottom.

Depth: 49.5 feet below land surface.

Installation: Turbine pump.

Production: 192,000 gpd., operating 16 hours/day at 200 gpm.

Temperature: 58° F.

Water level: 23 feet below land surface, 1945.

.....

120 (a), Western State Penitentiary, 1 Doerr St., Pittsburgh. Drilled in
1932 by James G. Hart. Usage: General.

Surface elevation: 725.6 feet.

Diameter of casing: 18 inches.

Depth: 63 feet below land surface.

Installation: Turbine pump; capacity, 700 gpm.

Production: 297,000 gpd., operating 15 hours/day at 330 gpm.

Temperature: 55° F.

Water level: 22.0 feet below land surface, 1945.

.....

120 (b), Western State Penitentiary, 1 Doerr St., Pittsburgh. Drilled
in 1932 by James G. Hart. Usage: General.

Surface elevation: 721.54 feet.

Diameter of casing: 18 inches.

Depth: 46.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

120 (b), (Continued).

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Surface fill.	7	7
Gravel, sand, loam.	11	18
Gravel, blue clay	5	23
Sand and gravel	21	44
Gray shale.	2	46

<u>Chemical analysis</u>	
Composite sample from wells 120 (a), and 120 (b).	
	<u>Results in parts per million</u> (September, 1945)
Calcium (Ca).	53.1
Magnesium (Mg).	15.3
Sodium and Potassium (Na and K)	13.5
Chloride (Cl)	37.0
Sulfate (SO ₄)	105.0
Iron oxide and Aluminum oxide (Fe ₂ O ₃ and Al ₂ O ₃)	8.1
Total solids	339.0
Ignition loss	95.0
Iron (Fe)	0.0
Nitrate (NO ₃)	2.21
Silica (SiO ₂)	9.8
Total hardness.	162.45
Alkalinity.	119.7

Installation: Turbine pump; capacity, 700 gpm.

Production: 85,800 gpd., operating 11 hours/day at 130 gpm.
Temperature: 53° F.
Water level: 17.6 feet below land surface, 1946.

.....

121 (a), Liquid Carbonic Corp., 3101 Preble Ave., Pittsburgh.
Drilled in 1920 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 725 feet.
Diameter of casing: 10 inches.
Depth: 45 feet below land surface.

Installation: Turbine pump; capacity, 30 gpm.; motor-3-hp.
Production: Operates at 10 gpm. Emergency use only.
Temperature: 60° F.
Water level: 22 feet below land surface, 1936.

Records of wells in the valley alluvium of Allegheny County

121 (b), Liquid Carbonic Corp., 3101 Preble Ave., Pittsburgh. Drilled in 1936 by G. M. Baker and Son. Usage: Cooling.

Surface elevation: 725 feet.

Diameter of casing: 12 inches to depth of 35.5 feet. 8 feet of screen at bottom.

Depth: 48.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Hardpan and gravel.	35	35
Gravel (water).	7	42
Soapstone	4.5	46.5

Installation: Turbine pump; capacity, 50 gpm.; motor-5-hp.

Pumping test

Date: 1936.

Drawdown: 9 feet.

Yield: 30 gpm.

Specific capacity: 3.3.

Production: 43,200 gpd., operating 24 hours/day at 30 gpm.

Temperature: 60° F.

Water level: 25 feet below land surface, 1936.

121 (c), Liquid Carbonic Corp., 3101 Preble Ave., Pittsburgh. Drilled in 1936 by G. M. Baker and Son. Usage: Cooling.

Surface elevation: 725 feet.

Diameter of casing: 12 inches to depth of 36.25 feet. 10 feet of screen at bottom.

Depth: 47.3 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Hardpan and gravel.	33	33
Gravel (water).	12.3	45.3
Soapstone	2	47.3

Installation: Turbine pump; capacity, 125 gpm.; motor-7.5-hp.

Pumping test

Date: 1936.

Drawdown: 14 feet.

Yield: 60 gpm.

Specific capacity: 4.3.

Production: 86,400 gpd., operating 24 hours/day at 60 gpm.

Temperature: 60° F.

Water level: 25 feet below land surface, 1936.

Records of wells in the valley alluvium of Allegheny County

121 (d), Liquid Carbonic Corp., 3101 Preble Ave., Pittsburgh. Drilled in 1936 by G. M. Baker and Son. Usage: Cooling.

Surface elevation: 725 feet.

Diameter of casing: 12 inches to depth of 36.25 feet. 10 feet of screen at bottom.

Depth: 47.3 feet below land surface.

Installation: Turbine pump; capacity, 150 gpm.; motor-10-hp.

Pumping test

Date: 1936.

Drawdown: 12 feet.

Yield: 45 gpm.

Specific capacity: 3.75.

Production: 64,800 gpd., operating 24 hours/day at 45 gpm.

Temperature: 60° F.

Water level: 25 feet below land surface, 1936.

.....

122, Sterling Varnish Co., Haysville. Drilled in 1947 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 715 feet.

Diameter of casing: 12 inches to depth of 41.5 feet. 10 feet of screen at bottom.

Depth: 52.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Clay, wood, stone	12	12
Clay and stone.	18	30
Sandy clay and gravel	10	40
Clay, sand and gravel	12	52

Installation: Turbine pump; capacity, 150 gpm.

Production: 60,000 gpd., operating 8 hours/day at 125 gpm.

Temperature: 58 F.

Water level: 20.0 feet below land surface, September 20, 1947.

.....

123 (a), Sewickley Ice Co., Ohio River Blvd. & Pine St., Sewickley. Drilled in 1900. Usage: Cooling condensers.

Surface elevation: 730 feet.

Diameter of casing: 12 to 6 inches.

Depth: 65 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

123 (a), (Continued).

	<u>Chemical analysis</u>
	<u>Results in parts per million</u> (June 28, 1938)
Calcium hardness (Ca)	412
Magnesium hardness (Mg)	76
Total hardness	294
Alkalinity	488
pH	7.0
Sodium (Na)	11
Iron (Fe)	0.1
Manganese (Mn)	0.0
Dissolved solids	567

Installation: Centrifugal pump; capacity, 150 gpm.
Production: 216,000 gpd., operating 24 hours/day at 150 gpm.
Temperature: 58° F.
Water level: 30 feet below land surface, 1947.

123 (b), Sewickley Ice Co., Ohio River Blvd. & Pine St., Sewickley.
Drilled in 1900. Usage: Cooling condensers.

Surface elevation: 730 feet.
Diameter of casing: 8 to 5 inches.
Depth: 65 feet below land surface.
Installation: Centrifugal pump; capacity, 150 gpm.
Production: 72,000 gpd., operating 24 hours/day at 50 gpm.
Temperature: 58° F.
Water level: 30 feet below land surface, 1947.

123 (c), Sewickley Ice Co., Ohio River Blvd. & Pine St., Sewickley.
Drilled in 1900. Usage: Cooling condensers.

Surface elevation: 730 feet.
Diameter of casing: 8 to 5 inches.
Depth: 65 feet below land surface.
Installation: Centrifugal pump; capacity, 150 gpm.
Production: 108,000 gpd., operating 24 hours/day at 75 gpm.
Temperature: 58° F.
Water level: 30 feet below land surface, 1947.

124, Edgeworth Water Co., Edgeworth. Drilled in 1926. Usage: Municipal supply.

Records of wells in the valley alluvium of Allegheny County

124, (Continued).

Surface elevation: 685 feet. Top of casing 7 feet below river surface.
Type well: Five drilled wells connected to one pump.
Diameter of casing: 12 inches.
Depth: 40 feet below land surface.

Installation: Centrifugal pump; motor-20-hp.
Production: 500,000 gpd., operating at 1,100 gpm., when needed.
Temperature: 57° F.

.....
125 (a), Bethlehem Steel Co., Leetsdale. Drilled in 1939 by
Layne-New York, Inc. Usage: General.

Surface elevation: 700 feet. Top of casing 12.25 feet above land surface.
Diameter of casing: 24 to 16 inches to depth of 49.25 feet. 10 feet of
screen at bottom.
Depth: 59.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Slag	3	3
Clay	21	24
Hardpan (clay)	1	25
Sand and gravel	34	59

Installation: Turbine pump; capacity, 1,000 gpm.; motor-50-hp.

Pumping test

Date: 1939.	Duration:	8 hours.
	Static level:	29.05 feet.
	Drawdown:	4.7 feet.
	Yield:	542 gpm.
	Specific capacity:	115.3.

Production: 165,000 gpd., operating 5 hours/day at 550 gpm.
Temperature: 50° F.
Water level: 29.05 feet below land surface, December 28, 1939.

.....
125 (b), Bethlehem Steel Co., Leetsdale. Drilled in 1939 by
Layne-New York, Inc. Usage: General.

Surface elevation: 700 feet. Top of casing 11.25 feet above land surface.
Diameter of casing: 24 to 16 inches to depth of 49.5 feet. 10 feet of
screen at bottom.
Depth: 59.5 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

125 (b), (Continued).

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Slag.	13	13
Clay.	14	27
Sand and gravel	30	57
Clay.	1	58
Sand and gravel	1.5	59.5

Installation: Turbine pump; capacity, 1,000 gpm.; motor-50-hp.

Pumping test

Date: 1939.	Duration:	8 hours.
	Static level:	29.75 feet.
	Drawdown:	25 feet.
	Yield:	465 gpm.
	Specific capacity:	18.6.

Production: 25,000 gpd., operating at 450 gpm. For emergency use only.
Temperature: 50° F.
Water level: 29.75 feet below land surface, December 28, 1939.

.....

126 (a), Russell Burdsall & Ward, Bolt & Nut Co., Moon Township.
Drilled in 1927. Usage: Steel pickling.

Surface elevation: 700 feet.
Diameter of casing: 10 inches.
Depth: 70 feet below land surface.

Installation: Turbine pump; capacity, 150 gpm.; motor-10-hp.
Production: 27,000 gpd., operating 3 hours/day at 150 gpm.
Temperature: 55° F.
Water level: 18 feet below land surface, 1946.

.....

126 (b), Russell Burdsall & Ward, Bolt & Nut Co., Moon Township.
Drilled in 1930. Usage: General.

Surface elevation: 700 feet.
Diameter of casing: 10 inches.
Depth: 68 feet below land surface.

Installation: Turbine pump; capacity, 200 gpm.; motor-20-hp.
Production: 96,000 gpd., operating 8 hours/day at 200 gpm.
Temperature: 55° F.
Water level: 20 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

127, Continental Foundry & Machine Co., Moon Township. Drilled in 1924 by William Jackson. Usage: Drinking, washing.

Surface elevation: 700 feet.

Type wells: Two 8-inch drilled wells in bottom of 25-foot dug well.

Diameter of casing: 8 inches.

Depth: 50 feet below land surface.

Chemical analysis

Results in parts per million

(Nov. 3, 1939)

Total hardness.	266
Chlorides (Cl).	31
Sulfates (SO ₄).	106
Iron (Fe)	17.0
Manganese (Mn).	2.0
Turbidity	80.0
Color	10
pH.	7.4

Installation: Turbine pump; capacity, 200 gpm.; motor-20-hp.

Production: 108,000 gpd., operating 24 hours/day at 75 gpm.

Temperature: 59° F.

Water level: 25 feet below land surface, 1946.

.

128, Republic Oil Refining Co., Moon Township. Usage: Washing tanks.

Surface elevation: 715 feet.

Diameter of casing: 6 inches.

Depth: 60 feet below land surface.

Installation: Centrifugal pump; capacity, 300 gpm.

Production: 18,000 gpd., operating 1 hour/day at 300 gpm.

Temperature: 56° F.

Water level: 25 feet below land surface, 1946.

.

129, National Cylinder Gas Co., Moon Township. Drilled in 1928.

Usage: Cooling.

Surface elevation: 715 feet.

Diameter of casing: 12 inches.

Depth: 64 feet below land surface.

Installation: Turbine pump; capacity, 200 gpm.

Production: 216,000 gpd., operating 24 hours/day at 150 gpm.

Temperature: 56° F.

Water level: 20 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

130 (a), Standard Steel Spring Co. (Plant No. 2), Moon Township. Drilled in 1942 by Ohio Drilling Co. Usage: Cooling.

Surface elevation: 715 feet.
Diameter of casing: 12 inches to depth of 35 feet. 15 feet of screen at bottom.
Depth: 50.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill and clay.	7	7
Sand, clay	20	27
Sand, and gravel	4	31
Sand, gravel, little clay.	5	36
Sand and gravel.	17	53

	<u>Chemical analysis</u>	
	<u>Results in parts per million</u> (Dec. 10, 1945)	
pH.	7.1	
Hydroxide (OH).	0.0	
Sulfate (SO ₄)	77.0	
Chloride (Cl)	22.0	
Silica (SiO ₂)	10	
Iron (Fe)	4.5	
Calcium (Ca).	79.0	
Magnesium (Mg).	8.0	
Hardness (soap)	231.0	

Installation: Turbine pump; capacity, 500 gpm.; motor-35-hp.

<u>Pumping test</u>		
Date: 1942.	Duration:	12 hours.
	Drawdown:	13 feet.
	Yield:	700 gpm.
	Specific capacity:	53.9.

Production: 720,000 gpd., operating 24 hours/day at 500 gpm.
Temperature: 58° F.
Water level: 17.0 feet below land surface, October 6, 1942.

.

130 (b), Standard Steel Spring Co. (Plant No. 2), Moon Township. Drilled in 1942 by Ohio Drilling Co. Usage: Cooling.

Surface elevation: 715 feet.
Diameter of casing: 12 inches to depth of 35 feet. 15 feet of screen at bottom.
Depth: 50.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

130 (b), (Continued).

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill and clay.	7	7
Yellow clay and sand	20	27
Sand and gravel.	10	37
Gravel	7	44
Gravel, sand, little clay.	5	49
Sandrock	1.5	50.5

Installation: Turbine pump; capacity, 500 gpm.; motor-35-hp.

Pumping test

Date: 1942.	Duration:	12 hours.
	Drawdown:	13 feet.
	Yield:	575 gpm.
	Specific capacity:	44.2.

Production: 720,000 gpd., operating 24 hours/day at 500 gpm.

Temperature: 58° F.

Water level: 12.0 feet below land surface, October 8, 1942.

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131 (a), Pittsburgh Forgings Co., Coraopolis. Drilled in 1941
by Ohio Drilling Co. Usage: General.

Surface elevation: 715 feet.

Diameter of casing: 36 to 18 inches to depth of 42 feet. 20 feet of
screen at bottom.

Depth: 62.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill and slag.	8	8
Yellow clay.	16	24
Blue clay.	4	28
Clay and stones.	4	32
Sand, gravel and clay.	12	44
Sand and gravel.	10	54
Sand, gravel, little clay.	4	58
Sand	4	62
Sandrock	1	63

Records of wells in the valley alluvium of Allegheny County

131 (a), (Continued).

	<u>Chemical analysis</u>	
	<u>Results in parts per million</u> (Nov. 9, 1941)	
Chloride (Cl).		26
Iron (Fe).		0.6
Manganese (Mn)		3.4
Silica (SiO ₂).		8.8
Alkalinity		156
Temporary hardness		156
Permanent hardness		77
Total hardness		233
Dissolved solids		366
Iron oxide and Aluminum oxide (Fe ₂ O ₃ and Al ₂ O ₃).		2.8
Calcium oxide.		94.3
Magnesium oxide (MgO).		25.9
Sulfate.		90.3
pH		7.5

Installation: Turbine pump; capacity, 500 gpm.; motor-35-hp.*

Pumping test

Date: 1941.	Duration:	12 hours.
	Drawdown:	11 feet.
	Yield:	1,000 gpm.
	Specific capacity:	90.9.

Production: 360,000 gpd., operating 12 hours/day at 500 gpm.
Temperature: 58° F.
Water level: 29.0 feet below land surface, 1941.

.....
131 (b), Pittsburgh Forgings Co., Coraopolis. Drilled in 1942 by Ohio Drilling Co. Usage: General.

Surface elevation: 715 feet.
Diameter of casing: 36 to 18 inches to depth of 45 feet. 20 feet of screen at bottom.
Depth: 65.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill	10	10
Clay and sand.	17	27
Sand, gravel and clay.	13	40
Sand, gravel, little clay.	23	63
Rock	2	65

Records of wells in the valley alluvium of Allegheny County

131 (b), (Continued).

	<u>Chemical analysis</u>
	<u>Results in parts per million</u> (Nov. 9, 1941)
Chloride (Cl).	23
Iron (Fe).	0.2
Manganese (Mn)	2.4
Silica (SiO ₂)	8.4
Alkalinity	122
Temporary hardness	122
Permanent hardness	98
Total hardness	220
Dissolved solids	356
Iron oxide and Aluminum oxide (Fe ₂ O ₃ and Al ₂ O ₃).	2.4
Calcium oxide (CaO).	88.9
Magnesium oxide (MgO).	24.5
Sulfate (SO ₄).	115.4
pH	7.4

Installation: Turbine pump; capacity, 500 gpm.; motor-35-hp.

Pumping test

Date: 1942.	Duration: 12 hours.
	Drawdown: 8 feet.
	Yield: 875 gpm.
	Specific capacity: 109.4.

Production: 360,000 gpd., operating 12 hours/day at 500 gpm.

Temperature: 58° F.

Water level: 32.0 feet below land surface, 1942.

.....

132 (a), Canfield Oil Co., 620 Fourth Ave., Coraopolis. Drilled in 1923 by Keystone Drilling Co. Usage: Cooling.

Surface elevation: 715 feet.

Diameter of casing: 12 inches.

Depth: 65 feet below land surface.

Installation: Centrifugal pump; capacity, 500 gpm.

Production: Operates at 500 gpm. Emergency use only.

Temperature: 58° F.

Water level: 30 feet below land surface, 1941.

.....

132 (b), Canfield Oil Co., 620 Fourth Ave., Coraopolis. Drilled in 1939 by Ohio Drilling Co. Usage: Cooling.

Surface elevation: 715 feet.

Diameter of casing: 36 to 20 inches to depth of 45 feet. 15 feet of screen at bottom.

Depth: 60.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

132 (b), (Continued).

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Clay and mud.	12	12
Clay.	6.5	18.5
Clay and gravel	6	24.5
Gravel, sand and clay	17.5	42
Sand and gravel	10	52
Clay and stones	9	61

Installation: Centrifugal pump; capacity, 600 gpm.

Pumping test

Date: 1939.	Duration:	12 hours.
	Drawdown:	15 feet.
	Yield:	1,500 gpm.
	Specific capacity:	100.

Production: 864,000 gpd., operating 24 hours/day at 600 gpm.

Temperature: 58° F.

Water level: 28.0 feet below land surface, 1939.

.

132 (c), Canfield Oil Co., 620 Fourth Ave., Coraopolis. Drilled in 1941 by Ohio Drilling Co. Usage: Cooling.

Surface elevation: 715 feet.

Diameter of casing: 20 inches to a depth of 43 feet. 15 feet of screen at bottom.

Depth: 58.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Clay.	12	11
Clay and stones	12	24
Gravel, sand and clay	6	30
Sand and gravel	6	36
Gravel and clay	5.5	41.5
Gravel, sand and clay	5	46.5
Gravel and clay	5	51.5
Clay and stones	9	60.5
Rock.	0.5	61

Installation: Centrifugal pump; capacity, 700 gpm.

Pumping test

Date: 1941.	Duration:	12 hours.
	Drawdown:	15 feet.
	Yield:	675 gpm.
	Specific capacity:	45.

Records of wells in the valley alluvium of Allegheny County

132 (c), (Continued).

Production: Operates at 500 gpm. Emergency use only.

Temperature: 58° F.

Water level: 28.0 feet below land surface, 1941.

.....

133, Standard Steel Spring Co., (Plant No. 1), 843 Fourth Ave.,
Coraopolis. Drilled in 1944 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 715 feet.

Diameter of casing: 12 inches.

Depth: 60.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	2.8	2.8
Brown and gray clay	2.2	5.0
Gray and brown sandy clay	12.2	17.2
Sand and gravel	22.8	40.0
Sand and fine gravel.	10.0	50.0
Sand and gravel	5.0	55.0
Sand and gravel, little clay.	5.0	60.0

Installation: Turbine pump.

Production: 432,000 gpd., operating 24 hours/day at 300 gpm.

Temperature: 58° F.

Water level: 35.0 feet below land surface, 1944.

.....

134, Coraopolis Ice Co., Fourth Ave. & Kendall St., Coraopolis.
Drilled in 1935 by Allen Drilling Co. Usage: Cooling.

Surface elevation: 718 feet. Top of casing 27 feet below land surface.

Type well: 3 drilled wells, in bottom of dug well.

Diameter of casing: 12 inches.

Depth: 72.0 feet below land surface.

	<u>Chemical analysis</u>
	<u>Results in parts per million</u> (June 22, 1938)
Temporary hardness.	174.4
Permanent hardness.	99.2
Dissolved solids.	413.0
Suspended matter.	0.68
Silica (SiO ₂)	12.0
pH.	7.8

Installation: Plunger pump.

Records of wells in the valley alluvium of Allegheny County

134, (Continued).

Production: 6,000 gpd., operating 5 hours/day at 20 gpm.

Temperature: 54° F.

Water level: 33 feet below land surface, 1946.

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135 (a), Coraopolis Borough, Coraopolis. Drilled in 1910 (15 wells) and in 1929 (5 wells). Usage: Municipal supply.

Surface elevation: 685 feet. Top of casing 4 feet below river surface.

Type well: 20 drilled wells connected to 1 pump.

Diameter of casing: 10 inches.

Depth: 38 feet below land surface.

Chemical analysis

Results in parts per million
(August, 1946)

Iron (Fe)	0.8
Magnesium (Mg)	39.9
Chloride (Cl)	25.0
pH	7.0
Alkalinity	100
Total hardness	202

Installation: Suction pump.

Production: 864,000 gpd., operating 24 hours/day at 600 gpm.

Temperature: 55° F.

.....

135 (b), Coraopolis Borough, Coraopolis. Drilled in 1936 by Ohio Drilling Co. Usage: Municipal supply.

Surface elevation: 715 feet.

Diameter of casing: 48 to 18 inches to depth of 47 feet. 20 feet of screen at bottom.

Depth: 67.0 feet below land surface.

Installation: Turbine pump; motor-25-hp.

Pumping test

Date: 1936.

Drawdown: 17.5 feet.

Yield: 527 gpm.

Specific capacity: 30.1.

Production: Operates when needed at 600 gpm.

Temperature: 55° F.

Water level: 35 feet below land surface, 1936.

Records of wells in the valley alluvium of Allegheny County

135 (c), Coraopolis Borough, Coraopolis. Drilled in 1936 by Ohio Drilling Co. Usage: Municipal supply.

Surface elevation: 715 feet.

Diameter of casing: 48 to 18 inches to depth of 47 feet. 20 feet of screen at bottom.

Depth: 67.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	28	28
Clay and pebbles.	6.3	34.3
Sand and gravel	10.2	44.5
Fine sand, little gravel.	5	49.5
Sand, large pebbles	5.2	54.7
Sand and clay	5.3	60
Sandstone	2	62

Installation: Turbine pump; motor-25-hp.

Pumping test

Date: 1936.

Drawdown: 18 feet.

Yield: 583 gpm.

Specific capacity: 32.4.

Production: 414,000 gpd., operating 12 hours/day at 575 gpm.

Temperature: 55° F.

Water level: 35 feet below land surface, 1936.

.....

135 (d), Coraopolis Borough, Coraopolis. Drilled in 1936 by Ohio Drilling Co. Usage: Municipal supply.

Surface elevation: 715 feet.

Diameter of casing: 48 to 18 inches to depth of 47 feet. 20 feet of screen at bottom.

Depth: 67.0 feet below land surface.

	<u>Chemical analysis</u>
	<u>Results in parts per million</u> (August, 1946)
Iron (Fe)	0.15
Magnesium (Mg).	47.1
Chloride (Cl)	28.0
pH.	7.0
Alkalinity.	116
Total hardness.	203

Installation: Turbine pump; motor-25-hp.

Records of wells in the valley alluvium of Allegheny County

135 (d), (Continued).

Pumping test

Date: 1936.

Drawdown: 22 feet.

Yield: 542 gpm.

Specific capacity: 24.6.

Production: 360,000 gpd., operating 12 hours/day at 500 gpm.

Temperature: 55° F.

Water level: 35.0 feet below land surface, 1936.

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136, Codo Manufacturing Corp., 1220 Second Ave., Coraopolis. Drilled in 1939 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 718 feet.

Diameter of casing: 8 inches to depth of 55 feet. 10 feet of screen at bottom.

Depth: 65.0 feet below land surface.

Installation: Centrifugal pump; capacity, 35 gpm.; motor-3-hp.

Production: 18,000 gpd., operating 20 hours/day at 15 gpm.

Temperature: 58° F.

Water level: 33.0 feet below land surface, November 16, 1939.

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137, Consolidated Lamp and Glass Co., Third Ave., Coraopolis. Drilled in 1912. Usage: Washing, cooling.

Surface elevation: 718 feet.

Diameter of casing 4 inches.

Depth: 80 feet below land surface.

Installation: Plunger pump; motor-3-hp.

Production: 90,000 gpd., operating 20 hours/day at 75 gpm.

Temperature: 58° F.

Water level: 30 feet below land surface, 1939.

.....

138, Pittsburgh Screw and Bolt Corp. (Graham Works), Neville Township. Drilled in 1939. Usage: Cooling.

Surface elevation: 718.89 feet.

Diameter of casing: 8 inches.

Depth: 50.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

138, (Continued).

Chemical analysis

Results in parts per million
(May 11, 1944)

Total hardness.	366
Calcium (Ca).	326
Magnesium (Mg).	40
Alkalinity.	216
Chloride (Cl)	91
Sulfate (SO ₄)	92
Iron (Fe)	4.5
Manganese (Mn).	0.5
pH.	7.2
Turbidity	45
Color	10

Installation: Centrifugal pump; capacity, 500 gpm.; motor-30-hp.

Production: 480,000 gpd., operating 16 hours/day at 500 gpm.

Temperature: 54° F.

Water level: 20 feet below land surface, 1946.

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139 (a), Dravo Corp., Neville Township. Drilled in 1918.

Usage: Drinking, air conditioning.

Surface elevation: 726 feet.

Diameter of casing: 6 inches.

Depth: 65 feet below land surface.

Chemical analysis

Results in parts per million
(Jan. 21, 1948)

Color	0
Odor.	0
Turbidity	0
Total residue	835
pH.	7.2
Nitrite (NO ₂)	0
Nitrate (NO ₃)	0.2
Chloride (Cl)	180
Alkalinity.	330
Hardness.	460
Iron (Fe)	0.1

Installation: Turbine pump; capacity, 100 gpm.; motor-5-hp.

Pumping test

Date: 1942.

Duration: 24 hours.

Drawdown: 6 feet.

Yield: 50 gpm.

Specific capacity: 8.33.

Records of wells in the valley alluvium of Allegheny County

139 (a), (Continued).

Production: Operates at 50 gpm. Emergency use only.

Temperature: 54° F.

Water level: 35 feet below land surface, June 26, 1942.

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139 (b), Dravo Corp., Neville Township. Drilled in 1940 by Pennsylvania Drilling Co. Usage: Drinking, air conditioning.

Surface elevation: 726 feet.

Diameter of casing: 12 inches to depth of 58 feet. 8 feet of screen at bottom.

Depth: 66.0 feet below land surface.

Chemical analysis

Results in parts per million
(Jan. 28, 1948)

Color.	0
Odor	0
Turbidity.	0
Total residue.	620
pH	7.2
Nitrite (NO ₂).001
Nitrate (NO ₃).	2.5
Chloride (Cl).	80
Alkalinity	250
Hardness	370
Iron (Fe).	0.1

Installation: Turbine pump; capacity, 350 gpm.; motor-20-hp.

Pumping test

Date: 1940.

Duration: 24 hours.

Drawdown: 27 feet.

Yield: 350 gpm.

Specific capacity: 13.0.

Production: 180,000 gpd., operating 12 hours/day at 250 gpm.

Temperature: 54° F.

Water level: 30 feet below land surface, May, 1940.

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139 (c), Dravo Corp., Neville Township. Drilled in 1943 by Pennsylvania Drilling Co. Usage: Cleaning, fire protection.

Surface elevation: 725 feet.

Diameter of casing: 48 inches.

Depth: 65 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

139 (c), (Continued).

Chemical analysis

Results in parts per million
(Feb. 23, 1943)

Color.	10
Odor	0
Turbidity.	10
pH	6.4
Ammonia nitrogen040
Chloride	140
Alkalinity	80
Hardness	290
Iron	0.4

Installation: Turbine pump; capacity, 750 gpm.; motor-60-hp.

Pumping test

Date: 1944.	Duration:	24 hours.
	Drawdown:	21 feet.
	Yield:	800 gpm.
	Specific capacity:	38.1.

Production: 90,000 gpd., operating 2 hours/day at 750 gpm.

Temperature: 54° F.

Water level: 33 feet below land surface, March 30, 1944.

140, Lee C. Moore Corp., Neville Township. Usage: Washing, cooling.

Surface elevation: 722 feet.

Diameter of casing: 8 inches.

Depth: 60 feet below land surface.

Installation: Turbine pump; capacity, 100 gpm.

Production: 42,000 gpd., operating 10 hours/day at 70 gpm.

Temperature: 54° F.

Water level: 35 feet below land surface, 1946.

141, Concrete Products of America, Neville Township. Drilled in 1910.
Usage: Washing, fire protection.

Surface elevation: 720 feet.

Diameter of casing: 10 inches.

Depth: 60 feet below land surface.

Installation: Plunger pump; capacity, 150 gpm.; motor-3-hp.

Production: 18,000 gpd., operating 2 hours/day at 150 gpm.

Temperature: 55° F.

Water level: 30 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

142, Air Reduction Sales Co., Neville Township. Drilled in 1922.
Usage: Cooling, gas generation.

Surface elevation: 720 feet.
Diameter of casing: 10 inches.
Depth: 60 feet below land surface.

Installation: Centrifugal pump; capacity, 50 gpm.; motor-7.5-hp.
Production: 43,200 gpd., operating 16 hours/day at 45 gpm.
Temperature: 52° F.
Water level: 30 feet below land surface, 1946.

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143, Marcus-Ruth-Jerome Co. of Pennsylvania, Inc., Neville Township.
Usage: Cooling.

Surface elevation: 720 feet.
Diameter of casing: 6 inches.
Depth: 70 feet below land surface.

Installation: Turbine pump; capacity, 150 gpm.
Production: 54,000 gpd., operating 12 hours/day at 75 gpm.
Temperature: 52° F.
Water level: 30 feet below land surface, 1946.

.....

144 (a), Neville Co., Neville Township. Drilled in 1941 by Allen
Drilling Co. Usage: Cooling.

Surface elevation: 717.8 feet. Top of casing 4 feet below land surface.
Diameter of casing: 12 inches.
Depth: 58.0 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.; motor-40-hp.
Production: 480,000 gpd., operating 16 hours/day at 500 gpm.
Temperature: 56° F.
Water level: 19.25 feet below land surface, September, 1941.

.....

144 (b), Neville Co., Neville Township. Drilled in 1941 by Allen
Drilling Co. Usage: Cooling.

Surface elevation: 717.8 feet. Top of casing 4 feet below land surface.
Diameter of casing: 12 inches.
Depth: 58.0 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.; motor-40-hp.
Production: Operates at 250 gpm. Emergency use only.
Temperature: 56° F.
Water level: 20 feet below land surface, 1941.

Records of wells in the valley alluvium of Allegheny County

145, Neville Island Glass Co. Inc., Neville Township. Drilled in 1946 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 720 feet.
Diameter of casing: 12 inches to depth of 52.5 feet. 15 feet of screen at bottom.
Depth: 67.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Slag.	14	14
River silt.	8	22
Sand and gravel	45	67
Bedrock		67 +

Installation: Turbine pump; capacity, 250 gpm.

Pumping test

Date: 1946.	Duration:	21 hours.
	Static level:	22 feet.
	Drawdown:	10 feet.
	Yield:	105 gpm.
	Specific capacity:	10.5.

Production: 240,000 gpd., operating 16 hours/day at 250 gpm.
Temperature: 54° F.
Water level: 22.0 feet below land surface, December 5, 1946.

.....

146 (a), Pittsburgh Coke and Chemical Co., Neville Township.
Drilled in 1920. Usage: Drinking, sanitation.

Surface elevation: 733.92 feet.
Diameter of casing: 8 inches.
Depth: 68.0 feet below land surface.

Installation: Turbine pump; capacity, 250 gpm.; motor-10-hp.
Production: 288,000 gpd., operating 24 hours/day at 200 gpm.
Temperature: 57° F.
Water level: 32 feet below land surface, 1946.

.....

146 (b), Pittsburgh Coke and Chemical Co., Neville Township.
Drilled in 1931 by Pennsylvania Drilling Co. Usage: Drinking, sanitation.

Surface elevation: 734.40 feet.
Diameter of casing: 12 inches to depth of 61.5 feet. 7.5 feet of screen at bottom.
Depth: 69.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

146 (b), (Continued).

	<u>Chemical analysis</u>
	<u>Results in parts per million</u> (Dec. 2, 1946)
Hardness.	128
Iron (Fe)15
Manganese (Mn).25
Alkalinity.	96.0
pH.	7.5

Installation: Turbine pump; capacity, 700 gpm.; motor-50-hp.
Production: 864,000 gpd., operating 24 hours/day at 600 gpm.
Temperature: 57° F.
Water level: 32.25 feet below land surface, 1931.

146 (c), Pittsburgh Coke and Chemical Co., Neville Township. Drilled in 1944 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 726 feet.
Diameter of casing: 18 inches to depth of 45 feet. 16.8 feet of screen at bottom.
Depth: 61.8 feet below land surface.

Installation: Turbine pump; capacity, 1,600 gpm.; motor-85-hp.

Pumping test

Date: 1944.	Duration: 12 hours.
	Static level: 22.4 feet.
	Drawdown: 21 feet.
	Yield: 903 gpm.
	Specific capacity: 43.0.

Production: 1,008,000 gpd., operating 24 hours/day at 700 gpm.
Temperature: 57° F.
Water level: 22.42 feet below land surface, 1944.

146 (d), Pittsburgh Coke and Chemical Co., Neville Township. Drilled in 1942 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 732.50 feet. Top of casing 1.5 feet above land surface.
Diameter of casing: 16 inches to depth of 50 feet. 19 feet of screen at bottom.
Depth: 69.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

146 (d), (Continued).

Chemical analysis

Results in parts per million
(Sept. 24, 1946)

Temporary hardness.	172
Permanent hardness.	201
Dissolved solids.	557
Suspended solids.	54
Calcium bicarbonate (CaHCO_3).	172
Calcium sulfate (CaSO_4).	191
Magnesium sulfate (MgSO_4).	76.1
Sodium sulfate (NaSO_4).	35.3
Sodium chloride (NaCl).	51.3
Silica (SiO_2).	17.1
Iron oxide and Aluminum oxide (Fe_2O_3) and (Al_2O_3).	4.96
pH.	7.2

Installation: Turbine pump; capacity, 1,300 gpm.; motor-75-hp.

Pumping test

Date: 1942.	Duration: 12 hours.
	Drawdown: 20 feet.
	Static level: 34 feet.
	Yield: 1,100 gpm.
	Specific capacity: 55.0.

Production: 1,296,000 gpd., operating 24 hours/day at 900 gpm.

Temperature: 57° F.

Water level: 34.0 feet below land surface, April 24, 1942.

.....

146 (e), Pittsburgh Coke and Chemical Co., Neville Township.

Drilled in 1945 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 728.50 feet. Top of casing 1.7 feet above land surface.

Diameter of casing: 18 inches to depth of 57 feet. 12 feet of screen at bottom.

Depth: 69.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Ashes and slag fill	3	3
Fine sand	7	10
Coarse sand	5	15
Sand and gravel	32.5	47.5
Gray fine sand.	3.5	51
Sand and gravel	9	60
Sand, gravel, little clay	5	65
Sand, gravel, shale	2.5	67.5

Records of wells in the valley alluvium of Allegheny County

146 (e), (Continued).

Chemical analysis

Results in parts per million
(Sept. 24, 1946)

Total hardness.	159.1
Dissolved solids.	285.6
Suspended solids.	0.3
Calcium bicarbonate (CaHCO_3).	59.9
Calcium sulfate (CaSO_4)	83.8
pH.	7.3
Magnesium sulfate (MgSO_4)	45.5
Sodium sulfate (Na_2SO_4)	46.3
Sodium chloride (NaCl)	42.8
Silica (SiO_2)	10.3
Iron oxide and Aluminum oxide (Fe_2O_3) and (Al_2O_3) . . .	1.54

Installation: Turbine pump; capacity, 700 gpm.; motor-50-hp.

Pumping test

Date: 1945.	Duration:	12 hours.
	Static level:	23 feet.
	Drawdown:	30 feet.
	Yield:	875 gpm.
	Specific capacity:	29.2.

Production: 864,000 gpd., operating 24 hours/day at 600 gpm.

Temperature: 57° F.

Water level: 23.0 feet below land surface, Aug. 21, 1944.

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146 (f), Pittsburgh Coke and Chemical Co., Neville Township. Drilled in 1945 by Pennsylvania Drilling Co. Usage: Drinking, sanitation.

Surface elevation: 739.50 feet. Top of casing 1.5 feet above land surface. Diameter of casing: 18 inches to depth of 66.12 feet. 12 feet of screen at bottom.

Depth: 78.13 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Ashes and sand	4	4
Sand and gravel	30	34
Sand, gravel, little clay	1	35
Sand and gravel	9.5	44.5
Sand	7.5	52
Silt	2	54
Sand, gravel, little clay	11	65
Sand and gravel	11.5	76.5

Records of wells in the valley alluvium of Allegheny County

146 (f), (Continued).

Chemical analysis

Results in parts per million
(Dec. 2, 1946)

Total hardness.	180
Iron (Fe)	0.30
Manganese (Mn).	0.05
pH.	7.5

Installation: Turbine pump; capacity, 700 gpm.; motor-50-hp.

Pumping test

Date: 1945.	Duration:	12 hours.
	Static level:	35 feet.
	Drawdown:	29 feet.
	Yield:	900 gpm.
	Specific capacity:	31.03.

Production: 360,000 gpd., operating 24 hours/day at 250 gpm.

Temperature: 57° F.

Water level: 36.5 feet below land surface, May 1945.

.....

146 (g), Pittsburgh Coke and Chemical Co., Neville Township.
Drilled in 1934 by Pennsylvania Drilling Co. Usage: Bearing cooling.

Surface elevation: 726 feet.

Diameter of casing: 12 inches; perforated 50 to 65 feet.

Depth: 68.0 feet below land surface.

Installation: Centrifugal pump; capacity, 200 gpm.; motor-10-hp.

Production: 36,000 gpd., operating 24 hours/day at 25 gpm.

Temperature: 57° F.

Water level: 25 feet below land surface, 1946.

.....

147 (a), West View Municipal Authority, Neville Township.
Usage: Municipal supply.

Surface elevation: 700 feet.

Type well: 20 wells drilled in two rows below river surface, back channel of Ohio River.

Diameter of casing: 12 inches.

Depth: 40 feet below land surface.

Installation: 3 centrifugal pumps; combined capacity, 5,650 gpm.; combined motors-180-hp.

Production: 3,024,000 gpd., operating 24 hours/day at 2,100 gpm.

Records of wells in the valley alluvium of Allegheny County

147 (b), West View Municipal Authority, Neville Township. Usage: Municipal supply.

Surface elevation: 700 feet.

Type well: 34 wells drilled close together below river surface, main channel of Ohio River.

Diameter of casings: 12, 8 and 6 inches.

Depth: 40 feet below land surface.

Installation: Centrifugal pump; capacity, 1,500 gpm.; motor-40-hp.

Production: 1,152,000 gpd., operating 24 hours/day at 800 gpm.

.....

147 (c), West View Municipal Authority, Neville Township. Drilled in 1938 by Pennsylvania Drilling Co. Usage: Municipal supply.

Surface elevation: 728.75 feet.

Diameter of casing: 48 to 16 inches to depth of 42 feet. 16 feet of screen at bottom.

Depth: 58.0 feet below land surface.

Installation: Centrifugal pump; capacity, 1,600 gpm.; motor-50-hp.

Pumping test

Date: 1938.

Duration: 24 hours.

Drawdown: 19 feet.

Yield: 1,400 gpm.

Specific capacity: 73.7.

Production: 1,440,000 gpd., operating 24 hours/day at 1,000 gpm.

Temperature: 54° F.

Water level: 22.05 feet below land surface, 1938.

.....

147 (d), West View Municipal Authority, Neville Township. Drilled in 1943 by Pennsylvania Drilling Co. Usage: Municipal supply.

Surface elevation: 722.27 feet.

Diameter of casing: 12 inches to depth of 60 feet. Bottom 15 feet perforated.

Depth: 60.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Slag	11	11
Coarse gravel and sand	32	43
Gray sand, gravel, some clay	7	50
Gray and brown sand, some gravel	2	52
Gravel, dark coarse sand, some clay.	7	59

Records of wells in the valley alluvium of Allegheny County

147 (d), (Continued).

	<u>Chemical analysis</u>
	<u>Results in parts per million</u> (June 21, 1943)
Iron (Fe)	0.4
Manganese (Mn)	1.1
Calcium (Ca)	39.0
Magnesium (Mg)	11.0
pH	7.4
Sulfate (SO ₄)	72
Chloride (Cl)	16
Hardness	150
Alkalinity	60
Total solids	210

Installation: Turbine pump; capacity, 400 gpm.; motor-10-hp.

Pumping test

Date: 1943.	Duration:	2 hours.
	Drawdown:	8 feet.
	Yield:	375 gpm.
	Specific capacity:	46.9.

Production: 288,000 gpd., operating 24 hours/day at 200 gpm.

Temperature: 52° F.

Water level: 38.0 feet below land surface, March 19, 1943.

.....

147 (e), West View Municipal Authority, Neville Township. Drilled in 1943 by Pennsylvania Drilling Co. Usage: Municipal supply.

Surface elevation: 734.66 feet.

Diameter of casing: 18 inches.

Depth: 74.5 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Coarse slag.	19	19
Black sandy silt	5	24
Dark and gray clay	6	30
Clay and fine sand	9	39
Gravel, boulders, little sand and clay	7	46
Brown sand, some gravel.	4	50
Coarse gravel, sand, clay.	10	60
Gravel, sand, little clay.	14.5	74.5

Records of wells in the valley alluvium of Allegheny County

147 (e), (Continued).

	<u>Chemical analysis</u>
	<u>Results in parts per million</u> (Apr. 9, 1943)
Iron (Fe)	0.8
Manganese (Mn)	1.1
pH	7.6
Hardness	172
Alkalinity	82
Total solids	450

Installation: Turbine pump; capacity, 1,250 gpm.; motor-30-hp.

Pumping test

Date: 1943.	Duration: 3 hours.
	Drawdown: 14 feet.
	Yield: 833 gpm.
	Specific capacity: 59.5.

Production: 1,008,000 gpd., operating 24 hours/day at 700 gpm.

Temperature: 53° F.

Water level: 38.0 feet below land surface, April 6, 1943.

.....

147 (f), West View Municipal Authority, Neville Township. Drilled in 1947 by Ranney Water Collector Corp. Usage: Municipal supply.

Surface elevation: 725.71 feet.

Type well: Radial collector.

Diameter of well: 13 feet -- 11 horizontal radials 3 feet from bottom;
4 horizontal radials 6 feet from bottom.

Depth: 65.0 feet below land surface.

Installation: 2 centrifugal pumps; capacity, 2,800 and 4,150 gpm; motors-100- and -125-hp.

Pumping test

Date: 1948.	Duration: 24 hours.
	Drawdown: 19 feet.
	Yield: 1,400 gpm.
	Specific capacity: 73.7.

Production: Operates when needed at 700 gpm.

Temperature: 53° F.

Water level: 43.3 feet below land surface, December 17, 1947.

.....

148 (a), National Cylinder Gas Co., Stowe Township. Drilled in 1930 by James G. Hart. Usage: Compressor cooling.

Records of wells in the valley alluvium of Allegheny County

148 (a), (Continued).

Surface elevation: 730 feet.
Diameter of casing: 10 inches.
Depth: 90 feet below land surface.

<u>Chemical analysis</u>	
<u>Results in parts per million</u>	
(Dec. 13, 1938)	
Chloride (Cl).	56.4
Sulfate (SO ₄).	118.0
Iron (Fe).	trace
Temporary hardness	200.1
Permanent hardness	27.4
Total hardness	227.5
pH	7.3

Installation: Turbine pump; capacity, 150 gpm.; motor-10-hp.
Production: 216,000 gpd., operating 24 hours/day at 150 gpm.
Temperature: 53° F.
Water level: 30 feet below land surface, 1946.

.....

148 (b), National Cylinder Gas Co., Stowe Township. Drilled in 1937 by James G. Hart. Usage: Compressor cooling.

Surface elevation: 730 feet.
Diameter of casing: 10 inches to depth of 76.5 feet.
Depth: 90 feet below land surface.

Installation: Turbine pump; capacity, 200 gpm.; motor-10-hp.
Production: 72,000 gpd., operating 24 hours/day at 50 gpm.
Temperature: 53° F.
Water level: 30 feet below land surface, 1946.

.....

149 (a), Pressed Steel Car Co., Inc., Stowe Township. Drilled in 1928. Usage: Boilers, drinking.

Surface elevation: 730 feet.
Diameter of casing: 8 inches to depth of 40 feet.
Depth: 68 feet below land surface.

<u>Chemical analysis</u>	
<u>Results in parts per million</u>	
(Feb. 13, 1929)	
Color.	0
Odor	0
Turbidity.	5
Chloride (Cl).	60

Records of wells in the valley alluvium of Allegheny County

149 (a), (Continued).

	<u>Chemical analysis</u>	<u>Results in parts per million</u>
		(Feb. 13, 1929)
Nitrite (NO ₂)		0.002
Nitrate (NO ₃)		0.60
Iron (Fe)		0.3
Total solids		400
Alkalinity		150
Total hardness		260
pH		7.3

Installation: Turbine pump; capacity, 1,000 gpm.; motor-75-hp.
Production: 720,000 gpd., operating 24 hours/day at 500 gpm.
Water level: 28 feet below land surface, 1944.

.....
149 (b), Pressed Steel Car Co., Inc., Stowe Township. Drilled in 1944 by
Pennsylvania Drilling Co. Usage: Boilers, drinking.

Surface elevation: 730 feet.
Diameter of casing: 36 to 16 inches to depth of 68 feet.
Depth: 68.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill	10	10
Clay	5	15
Sandy loam	5	20
Sand	7	27
Sandy clay and gravel	5	32
Clay and sand	4	36
Blue clay	3	39
Sand and gravel	29	68

	<u>Chemical analysis</u>	<u>Results in parts per million</u>
		(Apr. 12, 1944)
Color		0
Odor		Earthy, faint
Turbidity		15
Chloride		35.0
Nitrite (NO ₂)		0.03
Nitrate (NO ₃)		0.40
Iron (Fe)		0.7
Total solids		260.0
Alkalinity		190.0
Total hardness		220.0
pH		7.1

Installation: Turbine pump; capacity, 500 gpm.

Records of wells in the valley alluvium of Allegheny County

149 (b), (Continued).

Pumping test

Date: 1944.

Duration: 12 hours.

Drawdown: 12 feet.

Yield: 500 gpm.

Specific capacity: 41.7.

Production: 720,000 gpd., operating 24 hours/day at 500 gpm.

Temperature: 55° F.

Water level: 28.0 feet below land surface, May 10, 1944.

150 (a), Carnegie-Illinois Steel Corp. (Schoen Steel Wheel Works),
McKees Rocks. Drilled in 1905. Usage: General.

Surface elevation: 729 feet.

Diameter of casing: 12 inches.

Depth: 60.3 feet below land surface.

Chemical analysis

Results in parts per million

(Oct. 29, 1946)

Hydroxide (OH).	0
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Sulfate (SO_4) 91

Chloride (Cl⁻) 23

Calcium (Ca)	86
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Magnesium (Mg)	2.0
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Suspended solids.	1.0
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Hardness 222

pH. 7.4

Installation: Turbine pump; capacity, 750 gpm.; motor-50-hp.

Production: Operates at 560 gpm. Emergency use only.

Temperature: 60° F.

Water level: 26 feet below land surface, 1941.

• • • • •

150 (b), Carnegie-Illinois Steel Corp. (Schoen Steel Wheel Works),
McKees Rocks. Drilled in 1941 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 729 feet. Top of casing 1 foot above land surface.

Diameter of casing: 12 inches to depth of 47 feet. 20 feet of screen at bottom.

Depth: 67.0 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.; motor-50-hp.

Records of wells in the valley alluvium of Allegheny County

150 (b), (Continued).

Pumping test

Date: 1941.

Duration: 48 hours.

Drawdown: 5 feet.

Yield: 650 gpm.

Specific capacity: 130.

Production: 360,000 gpd., operating 12 hours/day at 500 gpm.

Temperature: 60° F.

Water level: 25.5 feet below land surface, 1941.

.....
150 (c), Carnegie*Illinois Steel Corp. (Schoen Steel Wheel Works), McKees Rocks. Drilled in 1942 by Pennsylvania Drilling Co. Usage: General.

Surface elevation: 729 feet. Top of casing 2.4 feet above land surface.

Diameter of casing: 12 inches to depth of 48 feet. 21 feet of screen at bottom.

Depth: 69.0 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.; motor-40-hp.

Pumping test

Date: 1942.

Duration: 16 hours.

Drawdown: 3 feet.

Yield: 785 gpm.

Specific capacity: 261.7.

Production: 360,000 gpd., operating 12 hours/day at 500 gpm.

Temperature: 61° F.

Water level: 26.4 feet below land surface, 1942.

.....
151 (a), West View Municipal Authority, Stowe Township. Drilled in 1941 by Ohio Drilling Co. Usage: Municipal supply.

Surface elevation: 726 feet.

Diameter of casing: 12 inches.

Depth: 58.0 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.; motor-10-hp.

Pumping test

Date: 1941.

Duration: 26 hours.

Drawdown: 7.5 feet.

Yield: 535 gpm.

Specific capacity: 71.3.

Production: Operates at 500 gpm when needed.

Temperature: 63° F.

Water level: 17.2 feet below land surface, Dec. 20, 1947.

Records of wells in the valley alluvium of Allegheny County

151 (b), West View Municipal Authority, Stowe Township. Drilled in 1941 by Ohio Drilling Co. Usage: Municipal supply.

Surface elevation: 726 feet.
Diameter of casing: 12 inches.
Depth: 59.0 feet below land surface.

Chemical analysis

Results in parts per million
(Dec. 30, 1941)

Hardness.	154
Alkalinity.	135
Total solids.	315
Manganese (Mn).	3.0
Iron (Fe)	0.2
pH.	7.4

Installation: Turbine pump; capacity, 500 gpm.; motor-10-hp.

Pumping test

Date: 1941.	Duration: 24 hours.
	Drawdown: 15 feet.
	Yield: 675 gpm.
	Specific capacity: 45.

Production: Operates at 500 gpm when needed.
Temperature: 63° F.
Water level: 16.98 feet below land surface, Dec. 20. 1947.

152 (a), Lockhart Iron & Steel Co., McKees Rocks. Drilled in 1916 by Keystone Drilling Co. Usage: Cooling.

Surface elevation: 722 feet.
Diameter of casing: 12 to 8 inches.
Depth: 62.5 feet below land surface.

Installation: Double-action steam pump; capacity, 225 gpm.
Production: 144,000 gpd., operating 16 hours/day at 150 gpm.
Water level: 28 feet below land surface, 1946.

152 (b), Lockhart Iron & Steel Co., McKees Rocks. Drilled in 1916 by Keystone Drilling Co. Usage: Drinking, cooling.

Surface elevation: 722 feet.
Diameter of casing: 12 to 8 inches.
Depth: 63.0 feet below land surface.

Installation: Double-action steam pump; capacity, 225 gpm.
Production: 144,000 gpd., operating 16 hours/day at 150 gpm.
Water level: 28 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

152 (c), Lockhart Iron & Steel Co., McKees Rocks. Drilled in 1919 by Keystone Drilling Co. Usage: Cooling.

Surface elevation: 722 feet.
Diameter of casing: 12 to 8 inches with bottom 20 feet perforated.
Depth: 64.0 feet below land surface.

Installation: Double-action steam pump; capacity, 225 gpm.
Production: 144,000 gpd., operating 16 hours/day at 150 gpm.
Water level: 28 feet below land surface, 1946.

.....
152 (d), Lockhart Iron & Steel Co., McKees Rocks. Drilled in 1917 by Keystone Drilling Co. Usage: Cooling.

Surface elevation: 722 feet. Top of casing 8 feet below land surface.
Diameter of casing: 12 inches.
Depth: 65 feet below land surface.

Installation: Steam suction pump.
Production: 96,000 gpd., operating 16 hours/day at 100 gpm.
Water level: 28 feet below land surface, 1946.

.....
152 (e), Lockhart Iron & Steel Co., McKees Rocks. Drilled in 1917 by Keystone Drilling Co. Usage: Cooling.

Surface elevation: 722 feet. Top of casing 8 feet below land surface.
Diameter of casing: 12 inches.
Depth: 65 feet below land surface.

Installation: Steam suction pump.
Production: 96,000 gpd., operating 16 hours/day at 100 gpm.
Water level: 28 feet below land surface, 1946.

.....
152 (f), Lockhart Iron & Steel Co., McKees Rocks. Drilled in 1917 by Keystone Drilling Co. Usage: Cooling.

Surface elevation: 722 feet. Top of casing 8 feet below land surface.
Diameter of casing: 12 inches.
Depth: 65 feet below land surface.

Installation: Steam suction pump.
Production: 96,000 gpd., operating 16 hours/day at 100 gpm.
Water level: 28 feet below land surface, 1946.

152 (g), Lockhart Iron & Steel Co., McKees Rocks. Drilled in 1917 by Keystone Drilling Co. Usage: Cooling.

Records of wells in the valley alluvium of Allegheny County

152 (g), (Continued).

Surface elevation: 722 feet. Top of casing 8 feet below land surface.
Diameter of casing: 12 inches.
Depth: 65 feet below land surface.

Installation: Steam suction pump.
Production: Operates at 100 gpm. Emergency use only.
Water level: 28 feet below land surface, 1946.

.....
153 (a), Pittsburgh & Lake Erie Railroad, McKees Rocks. Drilled in 1913 by Pennsylvania Drilling Co. Usage: Locomotive and stationary boilers.

Surface elevation: 722 feet.
Diameter of casing: 18 inches.
Depth: 62 feet below land surface.

Chemical analysis

	<u>Results in parts per million</u> (Dec. 9, 1946)
Hardness.	328.3
Alkalinity.	208.6
pH.	6.6 - 7.4 (average 7.1)

Installation: Centrifugal pump; capacity, 600 gpm.
Production: 432,000 gpd., operating 12 hours/day at 600 gpm.
Temperature: 69° F.
Water level: 30 feet below land surface, 1946.

.....
153 (b), Pittsburgh & Lake Erie Railroad, McKees Rocks. Drilled in 1913 by Pennsylvania Drilling Co. Usage: Locomotive and stationary boilers.

Surface elevation: 722 feet.
Diameter of casing: 18 inches.
Depth: 62 feet below land surface.

Installation: Centrifugal pump; capacity, 600 gpm.
Production: 396,000 gpd., operating 12 hours/day at 550 gpm.
Temperature: 68° F.
Water level: 30 feet below land surface, 1946.

.....
153 (c), Pittsburgh & Lake Erie Railroad, McKees Rocks. Drilled in 1929 by Pennsylvania Drilling Co. Usage: Locomotive and stationary boilers.

Surface elevation: 722 feet.
Diameter of casing: 18 inches.
Depth: 62 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

153 (c), (Continued).

Installation: Centrifugal pump; capacity, 500 gpm.
Production: 108,000 gpd., operating 4 hours/day at 450 gpm.
Temperature: 59° F.
Water level: 30.0 feet below land surface, 1946.

153 (d), Pittsburgh & Lake Erie Railroad, McKees Rocks. Drilled in 1938 by Pennsylvania Drilling Co. Usage: Locomotive and stationary boilers.

Surface elevation: 722 feet.
Diameter of casing: 18 feet.
Depth: 62 feet below land surface.

Installation: Centrifugal pump; capacity; 1,000 gpm.
Production: 1,224,000 gpd., operating 24 hours/day at 850 gpm.
Temperature: 68° F.
Water level: 30.0 feet below land surface, 1946.

153 (e), Pittsburgh & Lake Erie Railroad, McKees Rocks. Drilled in 1946 by Pennsylvania Drilling Co. Usage: Locomotive and stationary boilers.

Surface elevation: 727.0 feet.
Diameter of casing: 18 inches to depth of 51 feet. 16.5 feet of screen at bottom.
Depth: 67.5 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	10	10
Cinders and clay.	2	12
Brown clay (tough).	10	22
Clay, sand and gravel	10	32
Sand and gravel, little clay.	5	37
Clay, sand and gravel	5	42
Coarse sand and gravel, clay.	25	67
Gray shale (bedrock).		67 +

Installation: Centrifugal pump; capacity, 1,000 gpm.; motor-50-hp.

Pumping test

Date: 1946.	Duration:	24 hours.
	Drawdown:	8.5 feet.
	Yield:	1,000 gpm.
	Specific capacity:	117.5.

Production: 1,440,000 gpd., operating 24 hours/day at 1,000 gpm.
Temperature: 57° F.
Water level: 30.45 feet below land surface, October, 1944.

Records of wells in the valley alluvium of Allegheny County

154 (a), Duquesne Light Co., Brunots Island, Pittsburgh. Drilled in 1930 by Kelly Well Co. Usage: Cooling.

Surface elevation: 730.5 feet. Top of casing 5 feet above land surface.
Diameter of casing: 24 inches.
Depth: 66.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	3	3
Yellow clay	9	12
Sandy yellow clay	11	23
Gravel and pebbles.	17	40
Sand, gravel and stones	14	54
Sand and gravel	12	66
Gray shale.		66 +

Chemical analysis

Results in parts per million
(July, 1946)

Hardness.	748.0
Dissolved solids.	1,141.0
Iron oxide (Fe ₂ O ₃).	26.0
Manganese (Mn).	5.2
pH.	6.72

Installation: Vertical suction pump; capacity, 500 gpm.; motor-40-hp.

Production: Operates at 475 gpm. Emergency use only.

Temperature: 57° F.

Water level: 25.0 feet below land surface, April, 1930.

.

154 (b), Duquesne Light Co., Brunots Island, Pittsburgh. Drilled in 1939 by Pennsylvania Drilling Co. Usage: Cooling.

Surface elevation: 740.0 feet.
Diameter of casing: 18 inches to depth of 65 feet. 15 feet of screen at bottom.
Depth: 80.0 feet below land surface.

Chemical analysis

Results in parts per million
(July, 1946)

Hardness.	622.0
Dissolved solids.	967.0
Iron oxide (Fe ₂ O ₃).	21.0
Manganese (Mn).	4.7
pH.	6.62

Installation: Turbine pump; capacity, 500 gpm.; motor-30-hp.

Production: Operates at 240 gpm. Emergency use only.

Records of wells in the valley alluvium of Allegheny County

154 (b), (Continued).

Temperature: 57° F.

Water level: 30.0 feet below land surface, April, 1939.

.....

155 (a), North Pole Cold Storage & Ice Co., 1218 West Carson St., Pittsburgh.
Drilled in 1928 by Allen Drilling Co. Usage: Ice manufacturing.

Surface elevation: 740 feet.

Diameter of casing: 20 inches to depth of 59 feet. 12 feet of screen at bottom.

Depth: 71.0 feet below land surface.

Chemical analysis

Results in parts per million
(Aug. 30, 1946).

Dissolved solids.	256.5
Total hardness.	179.6
Total alkalinity.	153.9
pH.	7.0

Installation: Turbine pump; capacity, 800 gpm.

Production: 1,080,000 gpd., operating 24 hours/day at 750 gpm.

Temperature: 60° F.

Water level: 22 feet below land surface, 1946.

.....

155 (b), North Pole Cold Storage & Ice Co., 1218 West Carson St., Pittsburgh.
Drilled in 1939 by Allen Drilling Co. Usage: Ice manufacturing.

Surface elevation: 740 feet.

Diameter of casing: 20 inches to depth of 57 feet. 14 feet of screen at bottom.

Depth: 71.0 feet below land surface.

Installation: Turbine pump; capacity, 1,000 gpm.

Production: 1,080,000 gpd., operating 24 hours/day at 750 gpm.

Temperature: 60° F.

Water level: 22 feet below land surface, 1946.

.....

156, W. W. Lawrence & Co., 1124-32 West Carson St., Pittsburgh. Drilled in
1902. Usage: Cooling, washing.

Surface elevation: 735 feet. Top of casing 15 feet below land surface.

Diameter of casing: 10 inches.

Depth: 80 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

156, (Continued).

Installation: Turbine pump; capacity, 50 gpm.; motor-5-hp.

Production: 9,000 gpd., operating 3 hours/day at 50 gpm.

Water level: 27 feet below land surface, 1946.

.....

157, East Carson Packing Co., East Carson St., Pittsburgh. Drilled by Pennsylvania Drilling Co. Usage: Refrigeration.

Surface elevation: 732 feet. Top of casing 8 feet below land surface.

Diameter of casing: 10 inches to depth of 44.7 feet.

Depth: 54.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Basement.	8	8
Cinders	4	12
Overburden.	20	32
Blue mud.	15	47
Gravel, sand and clay	7	54

Installation: Plunger pump.

Pumping test

Date: 1946.	Duration: 8 hours.
	Drawdown: 10 feet.
	Yield: 60 gpm.
	Specific capacity: 6.

Production: 54,000 gpd., operating 18 hours/day at 50 gpm.

Water level: 28.5 feet below land surface, September 3, 1946.

.....

158 (a), City of Duquesne, 12 South 2nd St., Duquesne. Drilled in 1924 by James G. Hart. Usage: Municipal supply.

Surface elevation: 750 feet.

Diameter of casing: 24 to 20 inches.

Depth: 130 feet below land surface.

Installation: Air lift.

Production: Operates when needed at 250 gpm. Borough total of 1,400,000 gpd.

Temperature: 75° F.

Water level: 25 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

158 (b), City of Duquesne, 12 South 2nd St., Duquesne. Drilled in 1938 by James G. Hart. Usage: Municipal supply.

Surface elevation: 735 feet.
Diameter of casing: 18 inches.
Depth: 82 feet below land surface.

Installation: Centrifugal pump; capacity, 400 gpm.; motor-10-hp.
Production: Operates at 200 gpm. Borough total of 1,400,000 gpd.
Temperature: 75° F.
Water level: 25 feet below land surface, 1946.

.....

158 (c), City of Duquesne, 12 South 2nd St., Duquesne. Drilled in 1941 by James G. Hart. Municipal supply.

Surface elevation: 750 feet.
Diameter of casing: 20 inches.
Depth: 118 feet below land surface.

Installation: Air lift.
Production: Operates when needed at 200 gpm. Borough total of 1,400,000 gpd.
Temperature: 75° F.
Water level: 25.0 feet below land surface, 1946.

.....

158 (d), City of Duquesne, 12 South 2nd St., Duquesne. Drilled in 1941 by James G. Hart. Usage: Municipal supply.

Surface elevation: 725 feet.
Diameter of casing: 20 inches.
Depth: 64 feet below land surface.

Installation: Centrifugal pump; capacity, 400 gpm.; motor-10-hp.
Production: Operates when needed at 200 gpm. Borough total of 1,400,000 gpd.
Temperature: 75° F.
Water level: 14.0 feet below land surface, 1941.

.....

158 (e), City of Duquesne, 12 South 2nd St., Duquesne. Drilled in 1943 by James G. Hart. Usage: Municipal supply.

Surface elevation: 735 feet.
Diameter of casing: 18 inches.
Depth: 87 feet below land surface.

Installation: Centrifugal pump; capacity, 400 gpm.; motor-10-hp.
Production: Operates when needed at 250 gpm. Borough total of 1,400,000 gpd.
Temperature: 75° F.
Water level: 25.0 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

158 (f), City of Duquesne, 12 South 2nd St., Duquesne. Drilled in 1947 by Pennsylvania Drilling Co. Usage: Municipal supply.

Surface elevation: 725.6 feet. Top of casing 1 foot below land surface. Diameter of casing: 12 inches to depth of 38.5 feet. 15 feet of screen to depth of 72 feet.

Depth: 72.0 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fill.	12	12
Sandy silt.	3	15
Sand and gravel, little clay.	5	20
Sandy silt, few gravel.	5	25
Gray sand, little clay.	10	35
Sand and gravel	8	43
Sandy clay and gravel	9	52
Soft shale.	0.5	52.5

Installation: Air lift.

Pumping test

Date: 1947.	Duration:	24 hours.
	Drawdown:	27 feet.
	Yield:	100 gpm.
	Specific capacity:	3.7.

Production: Operates when needed at 100 gpm. Borough total of 1,400,000 gpd.

Temperature: 53° F.

Water level: 13.5 feet below land surface, July 10, 1947.

.....

158 (g), City of Duquesne, 12 South 2nd St., Duquesne. Drilled in 1947 by Pennsylvania Drilling Co. Usage: Municipal supply.

Surface elevation: 727.6 feet. Top of casing 1.3 feet above land surface.

Diameter of casing: 12 inches to depth of 42 feet. 10 feet of screen to depth of 52 feet. Casing to depth of 71.5 feet.

Depth: 71.5 feet below land surface.

<u>Description</u>	<u>Driller's log</u>	
	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Cinders and fill.	11.5	11.5
Brown sandy clay.	5.5	17
Gray sand, little clay, few gravel.	9.5	26.5
Gray sandy clay	3.5	30
Gray sand, little clay and gravel	8	38
Sandy clay, few gravel.	2	40
Sand and gravel, clay	5	45
Sand and gravel	5	50
Sand and gravel, clay	3.5	53.5
Soft shale.	0.5	54

Records of wells in the valley alluvium of Allegheny County

158 (g), (Continued).

Chemical analysis

Results in parts per million

(Aug. 4, 1947)

Iron (Fe)	4.0
Manganese (Mn)	0.7
Alkalinity	99
Total hardness	120
Temporary hardness	99
Permanent hardness	21
Chloride (Cl)	24.0
pH	7.0
Total solids	302
Turbidity	40
Color	10

Installation: Centrifugal pump; capacity, 400 gpm.; motor-10-hp.

Pumping test

Date: 1947.	Duration:	24 hours.
	Drawdown:	30 feet.
	Yield:	135 gpm.
	Specific capacity:	4.5.

Production: Operates when needed at 135 gpm. Borough total of 1,400,000 gpd.

Temperature: 53° F.

Water level: 12.0 feet below land surface, Aug. 1, 1947.

.....

159 (a), Pennsylvania Industrial Chemical Corp., 120 State St., Clairton.
 Drilled in 1943 by Glenn Forney. Usage: Cooling.

Surface elevation: 750 feet.

Diameter of casing: 10 inches.

Depth: 73.0 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Fine brown sand.	25	25
Blue sandy clay.	20	45
Loose sand and gravel.	13	58
Gravel	7	65
Bedrock.	8	73

Records of wells in the valley alluvium of Allegheny County

159 (a), (Continued).

<u>Chemical analysis</u>	
	<u>Results in parts per million</u> (Sept. 5, 1945)
Hydroxide (OH).	0
Sulfate (SO ₄)	1,358
Chloride (Cl)	86
Iron (Fe)	26.0
Calcium (Ca).	445
Magnesium (Mg).	83
Soap hardness	1,454
Suspended solids.	high
Manganese (Mn).	0.0
pH.	6.8

Installation: Turbine pump; capacity, 400 gpm.; motor-25-hp.

Production: Operates at 300 gpm. Emergency use only.

Temperature: 67° F.

Water level: 38.0 feet below land surface, July, 1943.

159 (b), Pennsylvania Industrial Chemical Corp., 120 State St.,
Clairton. Drilled in 1944 by Glenn Forney. Usage: Cooling.

Surface elevation: 750 feet.

Diameter of casing: 12 inches to depth of 62 feet. 9 feet of screen
at bottom.

Depth: 71.0 feet below land surface.

<u>Driller's log</u>		
<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)
Rubble.	2	2
Clay and fine brown sand.	16	18
Fine brown sand	12	30
Blue sandy clay	16	46
Loose sand and gravel	10	56
Clay.	2	58
Sand and gravel	13	71

<u>Chemical analysis</u>	
	<u>Results in parts per million</u> (Sept. 5, 1945)
Hydroxide (OH).	0
Sulfate (SO ₄)	327
Chloride (Cl)	328
Iron (Fe)	5.2
Calcium (Ca).	291
Magnesium (Mg).	42
Soap hardness	899
Suspended solids.	high
Manganese (Mn).	1.0
pH.	6.9

Records of wells in the valley alluvium of Allegheny County

Installation: Turbine pump; capacity, 400 gpm.; motor-25-hp.

Pumping test

Date: 1944.

Duration: 24 hours.

Drawdown: 7 feet.

Yield: 255 gpm.

Specific capacity: 36.4.

Production: 403,200 gpd., operating 24 hours/day at 280 gpm.

Temperature: 67° F.

Water level: 43.0 feet below land surface, February, 1944.

.....

160 (a), Mississippi Glass Co., Floreffe. Drilled in 1936 by Robert Keaton. Usage: General plant use.

Surface elevation: 750 feet.

Diameter of casing: 12 inches.

Depth: 75.5 feet below land surface.

Driller's log

<u>Description</u>	<u>Thickness</u> (feet)	<u>Depth</u> (feet)	
Fill.	10	10	
Yellow clay	20	30	
Yellow clay and sand.	29	59	
Brown clay and medium gravel.	7	66	
Coarse sand and gravel.	6	72	
Coarse sand and brown clay.	3.5	75.5	T.D.

Chemical analysis

Results in parts per million
(Jan. 6, 1939)

Calcium (Ca).	765
Magnesium (Mg).	225
Total hardness.	990
Alkalinity.	260
Chloride (Cl)	40
Sulfate (SO ₄)	840
Iron (Fe)	1.0
Aluminum oxide (Al ₂ O ₃).	0.2
Turbidity	60.0
pH.	6.9

Installation: Centrifugal pump; capacity, 250 gpm.; motor-15-hp.

Production: 120,000 gpd., operating 8 hours/day at 250 gpm.

Water level: 35 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

160 (b), Mississippi Glass Co., Floreffe. Drilled in 1936 by Robert Keaton. Usage: General plant supply.

Surface elevation: 750 feet.
Diameter of casing: 12 inches.
Depth: 75 feet below land surface.

Chemical analysis

Results in parts per million
(Jan. 6, 1939)

Calcium (Ca)	490
Magnesium (Mg)	275
Total hardness	765
Alkalinity	250
Chloride (Cl)	36
Sulfate (SO ₄)	520
Iron (Fe)	0.8
Aluminum oxide (Al ₂ O ₃)	0.2
Turbidity	40.0
pH	7.1

Installation: Centrifugal pump; capacity, 250 gpm.; motor-15-hp.
Production: Operates at 250 gpm. Emergency use only.
Water level: 35.0 feet below land surface, 1946.

.....
161, Liggett Spring & Axle Co., E. Monongahela. Drilled in 1926 by Mr. Robinson. Usage: Drinking.

Surface elevation: 760 feet.
Diameter of casing: 5 inches.
Depth: 73 feet below land surface.

Installation: Plunger pump; capacity, 5 gpm.; motor-1-hp.
Production: 3,000 gpd., operating 10 hours/day at 5 gpm.
Water level: 25 feet below land surface, 1946.

.....
162 (a), Combustion Engineering Co., Inc. (Coshocton Iron Div.) E. Monongahela. Drilled in 1947. Usage: Boiler and service water.

Surface elevation: 750 feet.
Diameter of casing: 10 inches.
Depth: 54 feet below land surface.

Installation: Turbine pump; capacity, 100 gpm.
Production: 60,000 gpd., operating 10 hours/day at 100 gpm.
Water level: 34 feet below land surface, 1947.

Records of wells in the valley alluvium of Allegheny County

162 (b), Combustion Engineering Co., Inc. (Coshocton Iron Div.)
E. Monongahela. Drilled in 1917. Usage: Drinking.

Surface elevation: 750 feet.
Type well: Three drilled wells connected to one pump.
Diameter of casing: 4 inches.
Depth: 76.0 feet below land surface.

Installation: Plunger pump.
Production: 1,800 gpd., operating 3 hours/day at 10 gpm.
Water level: 30 feet below land surface, 1946.

.....

163 (a), Pittsburgh Steel Foundry Corp., 6th St., Glassport. Drilled in
1942 by James G. Hart. Usage: Cooling, general plant supply.

Surface elevation: 750 feet.
Diameter of casing: 20 inches.
Depth: 80 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.; motor-20-hp.
Production: 216,000 gpd., operating 24 hours/day at 150 gpm.
Temperature: 56° F.
Water level: 25 feet below land surface, 1946.

.....

163 (b), Pittsburgh Steel Foundry Corp., 6th St., Glassport. Drilled in
1942 by James G. Hart. Usage: Cooling, general plant supply.

Surface elevation: 750 feet.
Diameter of casing: 20 inches.
Depth: 80 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.; motor-20-hp.
Production: 144,000 gpd., operating 24 hours/day at 100 gpm.
Temperature: 56° F.
Water level: 25 feet below land surface, 1946.

.....

163 (c), Pittsburgh Steel Foundry Corp., 6th St., Glassport. Drilled in
1942 by James G. Hart. Usage: Cooling, general plant supply.

Surface elevation: 750 feet.
Diameter of casing: 20 inches.
Depth: 80 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.; motor-20-hp.
Production: 144,000 gpd., operating 24 hours/day at 100 gpm.
Temperature: 56° F.
Water level: 25.0 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

163 (d), Pittsburgh Steel Foundry Corp., 6th St., Glassport. Drilled in 1921 by James G. Hart. Usage: Cooling, general plant supply.

Surface elevation: 750 feet.
Diameter of casing: 18 inches.
Depth: 80 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.; motor-20-hp.
Production: Operates at 250 gpm. Emergency use only.
Temperature: 56° F.
Water level: 25 feet below land surface, 1946.

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163 (e), Pittsburgh Steel Foundry Corp., 6th St., Glassport. Drilled in 1921 by James G. Hart. Usage: Cooling, general plant supply.

Surface elevation: 750 feet.
Diameter of casing: 18 inches.
Depth: 80 feet below land surface.

Installation: Turbine pump; capacity, 500 gpm.; motor-20-hp.
Production: Operates at 250 gpm. Emergency use only.
Temperature: 56° F.
Water level: 25 feet below land surface, 1946.

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164 (a), Firth-Sterling Steel Co., Demmler Rd., McKeesport. Drilled in 1916 by James G. Hart. Usage: Boilers, cooling.

Surface elevation: 735 feet.
Diameter of casing: 12 inches.
Depth: 90 feet below land surface.

Installation: Turbine pump; capacity, 75 gpm.; motor-5-hp.
Production: 108,000 gpd., operating 24 hours/day at 75 gpm.
Water level: 25 feet below land surface, 1946.

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164 (b), Firth-Sterling Steel Co., Demmler Rd., McKeesport. Drilled in 1920 by James G. Hart. Usage: Boilers, cooling.

Surface elevation: 735 feet.
Diameter of casing: 10 inches.
Depth: 90 feet below land surface.

Installation: Turbine pump; capacity, 75 gpm.; motor-5-hp.
Production: 108,000 gpd., operating 24 hours/day at 75 gpm.
Water level: 25 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

165, Diamond Ice Co., 48 6th St., Braddock. Drilled in 1921 by Allen Drilling Co. Usage: Condenser cooling.

Surface elevation: 745 feet.
Diameter of casing: 6 inches.
Depth: 80 feet below land surface.

Installation: Centrifugal pump; capacity, 100 gpm.; motor-5-hp.
Production: 115,200 gpd., operating 24 hours/day at 80 gpm.
Temperature: 54° F.
Water level: 30 feet below land surface, 1947.

.....
166, American Steel & Wire Co., Rankin. Drilled in 1901. Usage: Cooling, drinking.

Surface elevation: 740 feet.
Diameter of casing: 8 inches.
Depth: 80 feet below land surface.

Installation: Steam plunger pump.
Production: 144,000 gpd., operating 24 hours/day at 100 gpm.
Temperature: 54° F.
Water level: 25.0 feet below land surface, 1945.

.....
167 (a), Westinghouse Electric Corp., East Pittsburgh. Dug in 1933 by Westinghouse Electric Corp. Usage: Cooling generators.

Surface elevation: 760 feet.
Type well: Dug.
Diameter of well: 5 feet.
Depth: 34.0 feet below land surface.

Installation: Turbine pump; capacity, 300 gpm.; motor-30-hp.
Drawdown: 12 feet at 200 gpm.
Production: 288,000 gpd., operating 24 hours/day at 200 gpm.
Temperature: 66° F.
Water level: 16.0 feet below land surface, 1947.

.....
167 (b), Westinghouse Electric Corp., East Pittsburgh. Dug in 1937 by Westinghouse Electric Corp. Usage: Cooling generators.

Surface elevation: 760 feet.
Type well: Dug.
Diameter of well: 8 feet (square).
Depth: 32.0 feet below land surface.

Installation: Turbine pump; capacity, 150 gpm.; motor-20-hp.
Drawdown: 12 feet at 75 gpm.
Production: 108,000 gpd., operating 24 hours/day at 75 gpm.
Temperature: 66° F.
Water level: 16.0 feet below land surface, 1947.

Records of wells in the valley alluvium of Allegheny County

167 (c), Westinghouse Electric Corp., East Pittsburgh. Dug in 1937 by Westinghouse Electric Corp. Usage: Cooling generators.

Surface elevation: 760 feet.
Type well: Dug.
Diameter of well: 8 feet (square).
Depth: 32.0 feet below land surface.

Installation: Turbine pump; capacity, 150 gpm.; motor-20-hp.
Drawdown: 12 feet at 75 gpm.
Production: 108,000 gpd., operating 24 hours/day at 75 gpm.
Temperature: 66° F.
Water level: 16.0 feet below land surface, 1947.

.....
167 (d), Westinghouse Electric Corp., East Pittsburgh. Dug by Westinghouse Electric Corp. Drilled in 1941 by Pennsylvania Drilling Co. Usage: Cooling generators.

Surface elevation: 760 feet.
Type well: Dug and drilled.
Diameter of well: 6 feet.
Diameter of casing: 8 inches
Depth: 184.0 feet (34 ft. dug) below land surface.

Installation: Turbine pump; capacity, 200 gpm.; motor-75-hp.
Production: 216,000 gpd., operating 24 hours/day at 150 gpm.
Temperature: 66° F.
Water level: 16.0 feet below land surface, 1947.

.....
168, Boston-McKeesport Brick Co., Harper Rd., Boston. Drilled in 1930. Usage: Brick manufacturing.

Surface elevation: 740 feet.
Diameter of casing: 6 inches.
Depth: 40 feet below land surface.

Installation: Plunger pump.
Production: 900 gpd., operating 3 hours/day at 5 gpm.
Water level: 25.0 feet below land surface, 1947.

.....
169 (a), Federal Enameling & Stamping Co., Thompson & Chartiers Aves., McKees Rocks. Drilled in 1946 by Robert Keaton. Usage: Washing ware.

Surface elevation: 740 feet. Top of casing 3.5 feet above land surface.
Diameter of casing: 12 inches to depth of 62 feet. 6 feet of screen at bottom.
Depth: 68.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

169 (a), (Continued).

Installation: Turbine pump; capacity, 250 gpm.; motor-15-hp.
Production: 345,600 gpd., operating 24 hours/day at 240 gpm.
Temperature: 50° F.
Water level: 17.0 feet below land surface, 1947.

169 (b), Federal Enameling & Stamping Co., Thompson & Chartiers Aves.,
McKees Rocks. Drilled in 1946 by Robert Keaton. Usage: Washing ware.

Surface elevation: 740 feet. Top of casing 3.5 feet above land surface.
Diameter of casing: 12 inches to depth of 62 feet. 6 feet of screen at
bottom.
Depth: 68.0 feet below land surface.

Installation: Turbine pump; capacity, 250 gpm.; motor-15-hp.
Production: Operates at 235 gpm. Emergency use only.
Temperature: 50° F.
Water level: 17.0 feet below land surface, 1947.

170, Columbia Steel & Shafting Co., Carnegie. Dug in 1920. Usage:
Wash for steels.

Surface elevation: 760 feet.
Type well: Dug and drilled.
Diameter of well: 8 feet (square).
Diameter of casing: 5 inches.
Depth: 46.0 feet below land surface.

Chemical analysis

Results in parts per million
(Apr. 22, 1944)

Iron (Fe)	0.1
Sulfate (SO ₄)	256
Chloride (Cl)	35
Alkalinity	236
Total hardness	536
Calcium (Ca)	444
Magnesium (Mg)	92
Turbidity	3
Color	3
pH	7.2

Installation: Centrifugal pump; capacity, 250 gpm.; motor-5-hp.
Production: 43,200 gpd., operating 16 hours/day at 45 gpm.
Temperature: 50° F.
Water level: 10.58 feet below land surface, 1946.

Records of wells in the valley alluvium of Allegheny County

171 (a), Duquesne Brewing Co., Chestnut and Jane Sts., Carnegie.
Drilled in 1907. Usage: Cooling condensers.

Surface elevation: 760 feet.
Diameter of casing: 5 inches.
Depth: 100 feet below land surface.

Installation: Plunger pump; capacity, 50 gpm.
Production: 7,200 gpd., operating 8 hours/day at 15 gpm.
Temperature: 50° F.
Water level: 20.0 feet below land surface, 1947.

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171 (b), Duquesne Brewing Co., Chestnut and Jane Sts., Carnegie.
Drilled in 1907. Usage: Cooling condensers.

Surface elevation: 760 feet.
Diameter of casing 5 inches.
Depth: 100 feet below land surface.

Installation: Plunger pump; capacity, 50 gpm.
Production: 7,200 gpd., operating 8 hours/day at 15 gpm.
Temperature: 50° F.
Water level: 20.0 feet below land surface, 1947.

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171 (c), Duquesne Brewing Co., Chestnut and Jane Sts., Carnegie.
Drilled in 1907. Usage: Cooling condensers.

Surface elevation: 760 feet.
Diameter of casing: 5 inches.
Depth: 100 feet below land surface.

Installation: Plunger pump; capacity, 50 gpm.
Production: 7,200 gpd., operating 8 hours/day at 15 gpm.
Temperature: 50° F.
Water level: 20.0 feet below land surface, 1947.

.....

172, Max Solomon Co., Superior St., Carnegie. Dug in 1917 by Mr.
Wolf. Usage: Drinking, cleaning.

Surface elevation: 780 feet.
Type well: Dug.
Diameter of well: 6 feet.
Depth: 23.0 feet below land surface.

Records of wells in the valley alluvium of Allegheny County

172, (Continued).

Installation: Plunger pump.

Production: 900 gpd., operating 3 hours/day at 5 gpm.

Temperature: 50° F.

Water level: 20.0 feet below land surface, 1947.

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173 (a), Woodville State Hospital, Woodville. Drilled in 1919 by W. S. Rickenbach. Usage: Boilers, laundry.

Surface elevation: 800 feet.

Diameter of casing: 8 inches.

Depth: 95.0 feet below land surface.

Installation: Air lift.

Production: 60,000 gpd., operating 20 hours/day at 50 gpm.

Water level: 30.0 feet below land surface, 1946.

.....

173 (b), Woodville State Hospital, Woodville. Drilled in 1919 by W. S. Rickenbach. Usage: Boilers, laundry.

Surface elevation: 800 feet.

Diameter of casing: 8 inches.

Depth: 95.0 feet below land surface.

Chemical analysis

Results in parts per million
(Aug. 2, 1946)

Calcium (Ca)	42.8
Magnesium (Mg)	0.7
Sodium (Na)	0.0
Sodium chloride (NaCl)	51.3
Iron oxide and Aluminum oxide (Fe ₂ O ₃) and (Al ₂ O ₃)	1.5
Calcium sulfate (CaSO ₄)	73.2
Magnesium sulfate (MgSO ₄)	0.0
Sodium sulfate (Na ₂ SO ₄)	130.8
Silica (SiO ₂)	6.0
pH.	7.6
Temporary hardness.	42.8
Permanent hardness.	92.3
Total hardness.	135.1
Suspended solids.	0.7
Dissolved solids.	350.6
Organic matter.	11.8

Installation: Air lift.

Production: 60,000 gpd., operating 20 hours/day at 50 gpm.

Water level: 30.0 feet below land surface, 1946.

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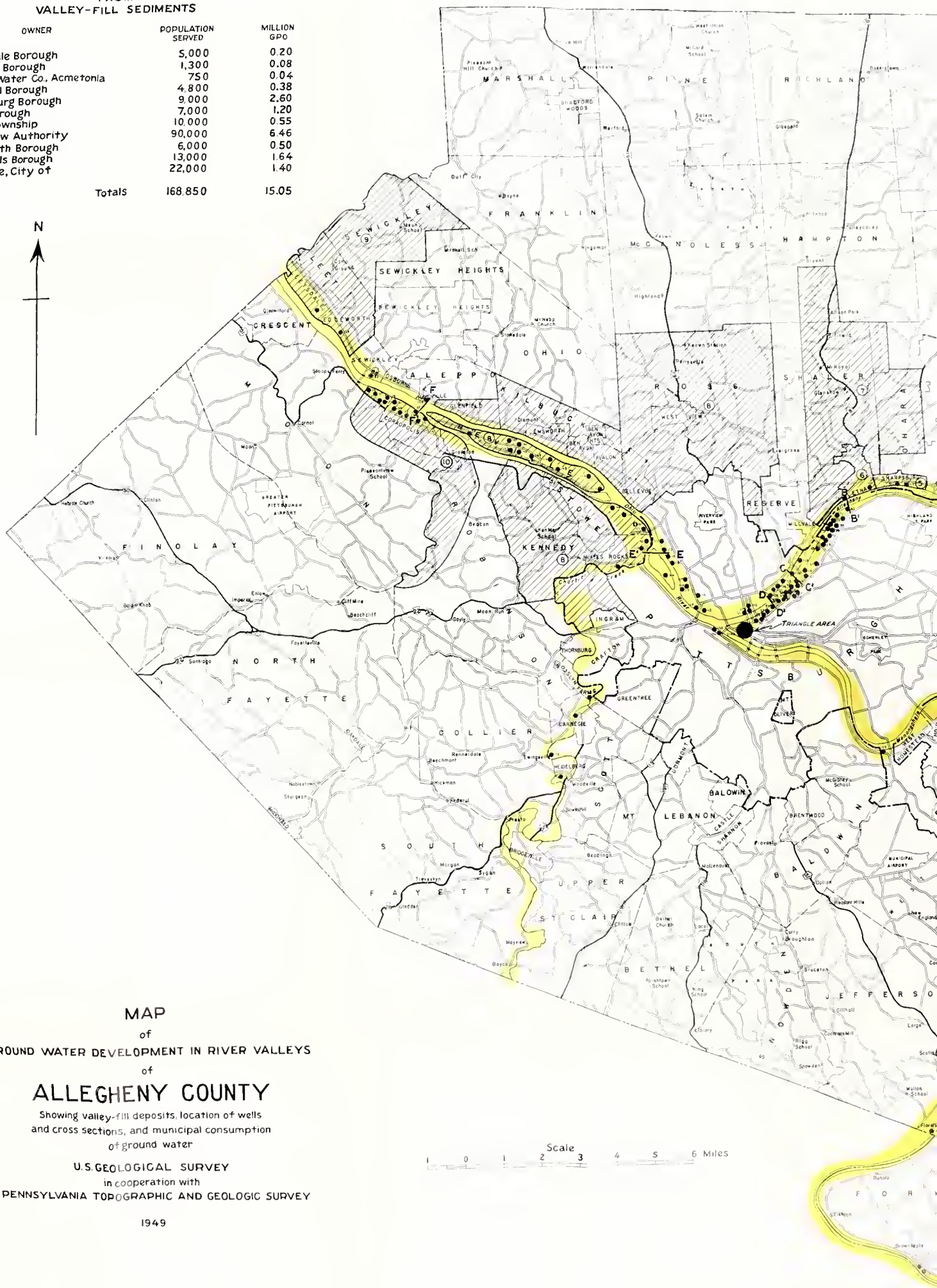
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ALLEGHENY COUNTY MUNICIPAL WATER SUPPLIES FROM VALLEY-FILL SEDIMENTS

NO.	OWNER	POPULATION SERVED	MILLION GPD
1	Springdale Borough	5,000	0.20
2	Cheswick Borough	1,300	0.08
3	Harmar Water Co., Acmetonia	750	0.04
4	Aspinwall Borough	4,800	0.38
5	Sharpsburg Borough	9,000	2.60
6	Etna Borough	7,000	1.20
7	Shaler Township	10,000	0.55
8	West View Authority	90,000	6.46
9	Edgeworth Borough	6,000	0.50
10	Coraopolis Borough	13,000	1.64
11	Duquesne, City of	22,000	1.40
Totals		168,850	15.05



MAP
of
GROUND WATER DEVELOPMENT IN RIVER VALLEYS
of
ALLEGHENY COUNTY
Showing valley-fill deposits, location of wells
and cross sections, and municipal consumption
of ground water

U.S. GEOLOGICAL SURVEY
in cooperation with
PENNSYLVANIA TOPOGRAPHIC AND GEOLOGIC SURVEY

1949

